

APPENDIX A

NOTICE OF PREPARATION MATERIALS

Notice of Preparation

Date: March 29, 2006

Subject: Notice of Preparation of a Draft Program Environmental Impact Report

Lead Agency: City of Carlsbad

Consulting Firm:

Agency Name: City of Carlsbad, Planning

Firm Name: EDAW

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Contact: Elaine Blackburn, Senior
Planner

Contact: Cindy Kinkade, Project
Manager

The City of Carlsbad (City), as the Lead Agency, will prepare a Program Environmental Impact Report (PEIR) for the project identified below. The City needs to know the view of your agency regarding the scope and content of the environmental information that is pertinent to your agency's statutory responsibilities in connection with the proposed project. Your agency will need to use the PEIR prepared by the Lead Agency when considering permit requirements or other approvals for the project.

The project description and location are contained in the attached materials. The probable environmental effects of the proposed project are listed below. An Initial Study has not been prepared for the project.

A public scoping meeting is scheduled for April 12, 2006, from 6:30 to 8:00 p.m. at the City of Carlsbad, located at 1635 Faraday Avenue, in Room 173-B. There will be an opportunity to submit written comments at this meeting. In addition, public input can be sent to Elaine Blackburn, Senior Planner, via mail at the above lead agency address. Please include the name and number of a contact person at your agency. Responsible agencies are requested to indicate their statutory responsibilities in connection with the project when responding.

Due to the time limits mandated by State law, your response must be sent at the earliest possible date, but must be received no later than May 4, 2006.

Project Title and Number: City of Carlsbad Drainage Master Plan Update Program EIR (Project No. 04-02)

Project Location: Citywide

Project Description: Citywide Drainage Master Plan Update and project level approvals for the Agua Hedionda Creek Dredging and Improvement Project; the Calavera Creek Flood Control Improvement Project; and long-term maintenance of Agua Hedionda and Calavera creeks (see detailed project description attached)

Probable Environmental Effects:

This PEIR would address how implementation of the proposed Drainage Master Plan Update would result in environmental effects for the following issue areas:

- Aesthetics
- Air Quality
- Biological Resources
- Cultural Resources
- Geology/Soils
- Hydrology/Water Quality
- Land Use and Planning
- Noise
- Paleontology
- Recreation
- Transportation/Circulation

These issue areas were selected because they were determined to have the potential for significant environmental effects.

1 Introduction

The proposed project, known as the City of Carlsbad (City) Drainage Master Plan (DMP) Update, is an update of the City's existing Master Drainage and Storm Water Quality Management Plan (MDSWQMP) (City of Carlsbad 1994). The DMP Update is a comprehensive planning document that serves to assess existing storm drain infrastructure and drainage areas, identify anticipated improvements and additional infrastructure required to accommodate storm flows resulting from future development within the City, and provide guidance on developing a Planned Local Drainage Area (PLDA) fee program to facilitate construction of specific drainage facilities (City of Carlsbad 2006). Under such a program, fees paid by developers are used by the City to construct storm water infrastructure required for handling the increased storm water flows resulting from new developments.

As a comprehensive planning document, the DMP Update provides an additional assessment of master plan funded drainage facilities, including both proposed and existing facilities that are now considered for rehabilitation. Operations and maintenance-related activities for these projects are also included in the DMP Update. In addition, the DMP Update identifies Capital Improvement Projects (CIP) for existing and proposed drainage facilities. These drainage facilities and operations and maintenance activities would not receive funding from the revised PLDA fee program developed as part of this proposed DMP Update. Within the DMP Update, these facilities are identified as non-PLDA projects that are deemed essential for the proper function of the City's drainage infrastructure.

All projects identified in the DMP Update are subject to environmental review and clearance and, therefore, the DMP Update will serve as the basis of analysis for the Program Environmental Impact Report (PEIR). Each of the components included in the DMP Update is currently in different stages of planning and design, with some facilities nearing design completion, while others remain in preliminary planning stages. Different degrees of project information are therefore available for each proposed facility, and the PEIR will analyze each facility to the level of detail possible given the stage of project design. As a result, while many of the proposed facilities will be addressed at a program level within the PEIR and will likely require additional California Environmental Quality Act (CEQA) as design progresses, adequate information is available for specific individual components that will be addressed at a project level. For those components analyzed at a project level, it is anticipated that this PEIR will be adequate for project approval without additional CEQA documentation.

The DMP Update addresses not only existing and future drainage facility requirements and operations and maintenance activities, but it also establishes a PLDA fee program that identifies specific projects required to accommodate future planned development within the City of Carlsbad. Therefore, two separate actions are included in the DMP Update: (1) approval of the proposed components and facilities required to accommodate future City of Carlsbad drainage needs, and (2) approval of the PLDA fee program. The PLDA fee program would establish developer fees used to provide adequate drainage infrastructure within the City as development progresses and would therefore have economic effects limited to the fiscal

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budget of the City. Such effects are not subject to CEQA (Section 15064e) and will therefore not be addressed in the PEIR.

1.1 Previous Drainage Master Plans

Drainage and storm water conveyance infrastructure in the City has been evaluated in a number of previous planning documents. The proposed project provides an update to these previous master planning documents, which are summarized below.

1971 Drainage Master Plan

In 1971, the City commissioned the first DMP to address citywide drainage infrastructure needs (City of Carlsbad 1971). However, the original DMP did not make provisions for collection of fees to support storm water infrastructure.

1980 Drainage Master Plan

The second version of the DMP was approved by City Council in 1980 (City of Carlsbad 1980). The 1980 DMP established a fee program to support storm water infrastructure costs that would be initiated upon submittal of subdivision plans. The 1980 DMP was developed prior to the implementation of the federal National Pollutant Discharge Elimination System Phase II regulations imposing strict storm water quality control requirements. Thus, the 1980 DMP focused primarily on storm water flood control measures, and not on water quality.

1994 Master Drainage and Storm Water Quality Management Plan

In 1988, a MDSQMP was commissioned by City Council to update the 1980 DMP and reassess the City's storm drainage facility needs. The updated MDSQMP was approved in 1994. The 1994 MDSQMP included all storm water control infrastructure for the drainage areas within the incorporated boundary of the City, encompassing approximately 39 square miles (City of Carlsbad 1994). Like the previous DMP, the 1994 MDSQMP addressed only those facilities that provide the backbone system to the City's storm water management infrastructure. Generally these consist of storm drainage pipes with a diameter of 30 inches or larger, together with concrete and rock-lined channels, permanent sedimentation/pollutant control basins, and other larger miscellaneous facilities. Unlike the original 1980 plan, the 1994 MDSQMP focused heavily on preservation and enhancement of storm water quality. This revised scope required a reevaluation of the localized PLDA fee concept to a more basinwide approach, resulting in the development of four large PLDA fee areas to coincide with the four major drainage basins within the City. A Negative Declaration (EIA #92-04) was prepared for the 1994 MDSQMP.

1996 Update to the Master Drainage and Storm Water Quality Management Plan

During preparation of the 1994 MDSQMP, the owner of the Rancho Carlsbad residential community requested that the portion of the creek traversing this property be omitted from the plan and that the property be exempt from any associated fees. Rancho Carlsbad was later purchased by the residents, with the intent to convert the community into condominium ownership. To address onsite flooding constraints, the owners of the residential community requested the omitted segment of Agua Hedionda Creek be included in the MDSQMP and required improvements be subject to the associated PLDA fee, to be paid by the homeowners. In 1996, the 1994 MDSQMP was therefore amended to include the previously omitted portion of

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Agua Hedionda Creek (1996 MDSQMP Update) (City of Carlsbad 1996). The amendment included measures proposed to bring the existing Agua Hedionda Creek into conformity with current design standards to contain a 100-year flood event. A Negative Declaration (EIA #96-03) was prepared for the amendments included in the 1996 MDSQMP Update.

1.2 Project Description and Objectives

1.2.1 Project Location

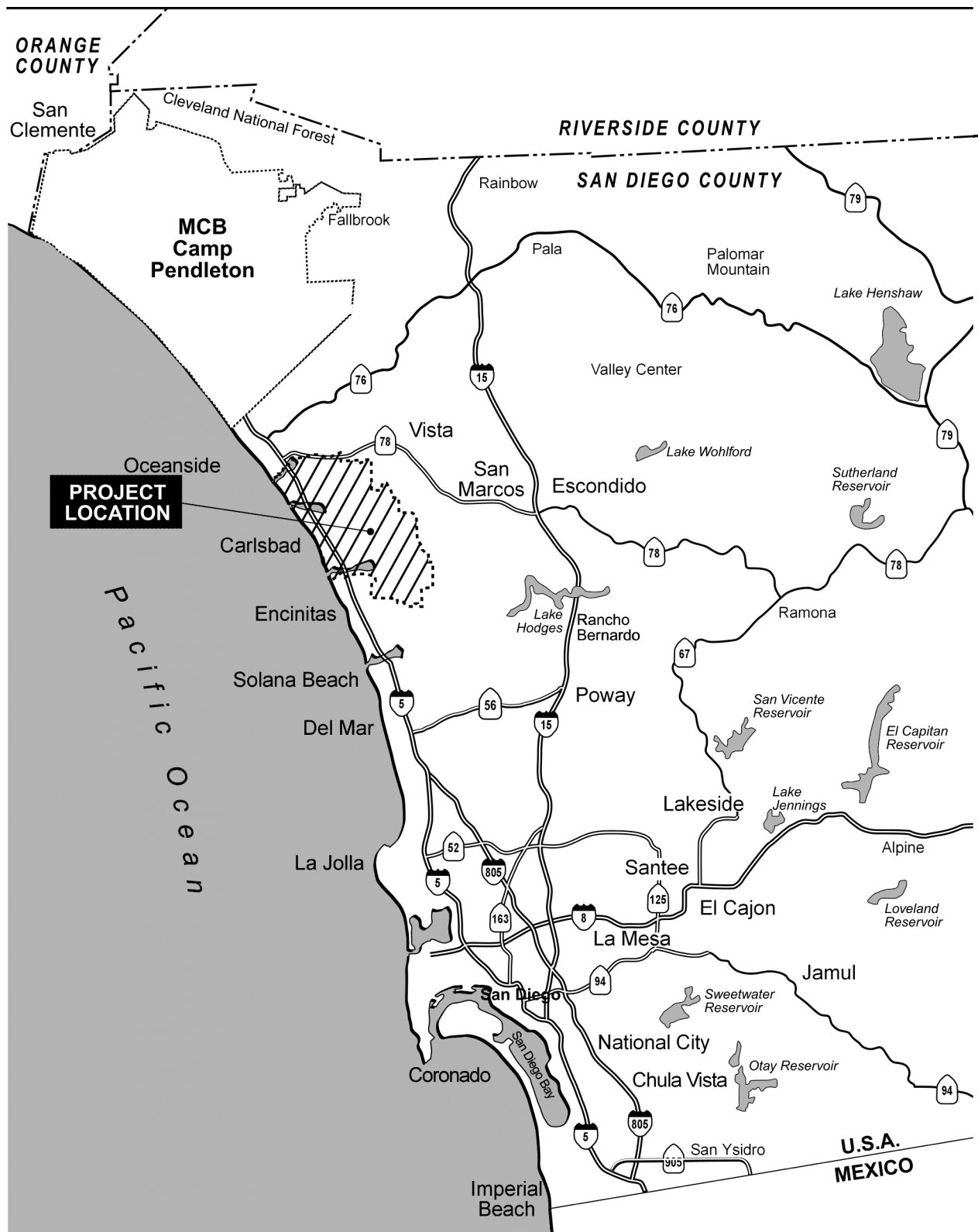
The project would be located in the northern part of San Diego County within the City of Carlsbad (Figure 1). The City is divided into four major drainage basins (Figure 2), which ultimately drain to the Pacific Ocean and roughly correspond to the four local watersheds (Buena Vista Creek, Agua Hedionda Creek, Encinas Creek, and Batiquitos Lagoon). These watersheds are described below. All project components would be located within the City's jurisdictional borders. Those proposed within Basin A are shown in Figure 3, while project components proposed in Basin B are illustrated in Figure 4. Figures 5 and 6 summarize project components proposed within Basins C and D, respectively.

Basin A – Buena Vista Creek Watershed

Buena Vista Creek Watershed, also identified as Basin A within the DMP Update, originates in the City of Vista and traverses the northwest section of the City of Carlsbad. The creek drains a 9-mile-long, 2-mile-wide area encompassing approximately 23 square miles (14,437 acres) (CWN 2006). Several small tributaries combine into an improved channel that flows for 3 miles in a southwest direction through the City of Vista before entering the City of Carlsbad thereafter. Buena Vista Creek eventually discharges into Buena Vista Lagoon, which has a 50-foot-wide, 5.8-foot-tall weir structure at the outlet for drainage control. The weir structure prevents water from flowing westward towards the Pacific Ocean, thus maintaining a minimum water level in the lagoon. The major land use in Basin A is primarily low- to medium-density residential, with some high-density residential development and commercial land use. Twenty-three percent of the basin is designated as open space, which is located mainly near the lagoon and its tributaries.

Basin B – Agua Hedionda Creek Watershed

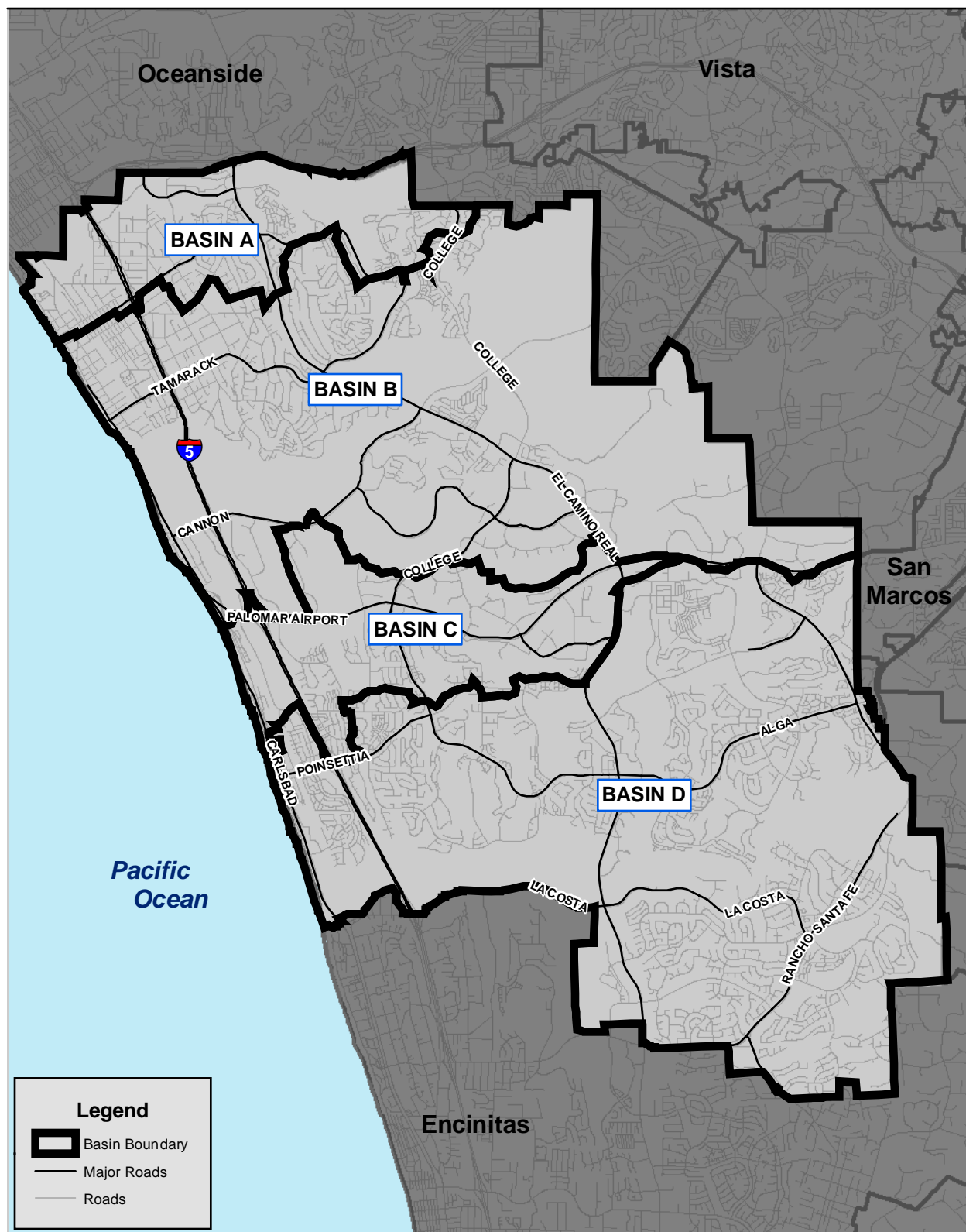
Agua Hedionda Creek originates south of the San Marcos Mountains and, together with its major tributary, Buena Creek, drains an area measuring approximately 29 square miles (18,837 acres) (CWN 2006). Three miles downstream of its origin, Agua Hedionda Creek merges with Buena Creek and then converges with Calavera Creek approximately 300 feet northeast of the intersection of El Camino Real and Cannon Road. Agua Hedionda Creek then extends several miles further before discharging into Agua Hedionda Lagoon. A portion of downtown Carlsbad is located in this watershed, which is identified as Basin B within the DMP Update. Additional commercial districts are scattered throughout the basin, mainly concentrated around Interstate 5 (I-5). North of Agua Hedionda Lagoon, the major land use is residential, with high-density residential located along the coast and low- and medium-density residential located farther inland. Palomar Airport is located in the southern portion of the basin and is surrounded by industrial areas. Twenty-nine percent of Basin B is designated as open space, primarily concentrated around the lagoon and in the Macario Canyon and Calavera Hills areas east of the lagoon.



No Scale



Figure 1
Regional Location Map



Source: Eagle Aerial, 2004; SanGIS; California Interagency Watershed Mapping Committee.

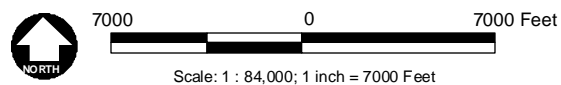


Figure 2
Drainage Basins

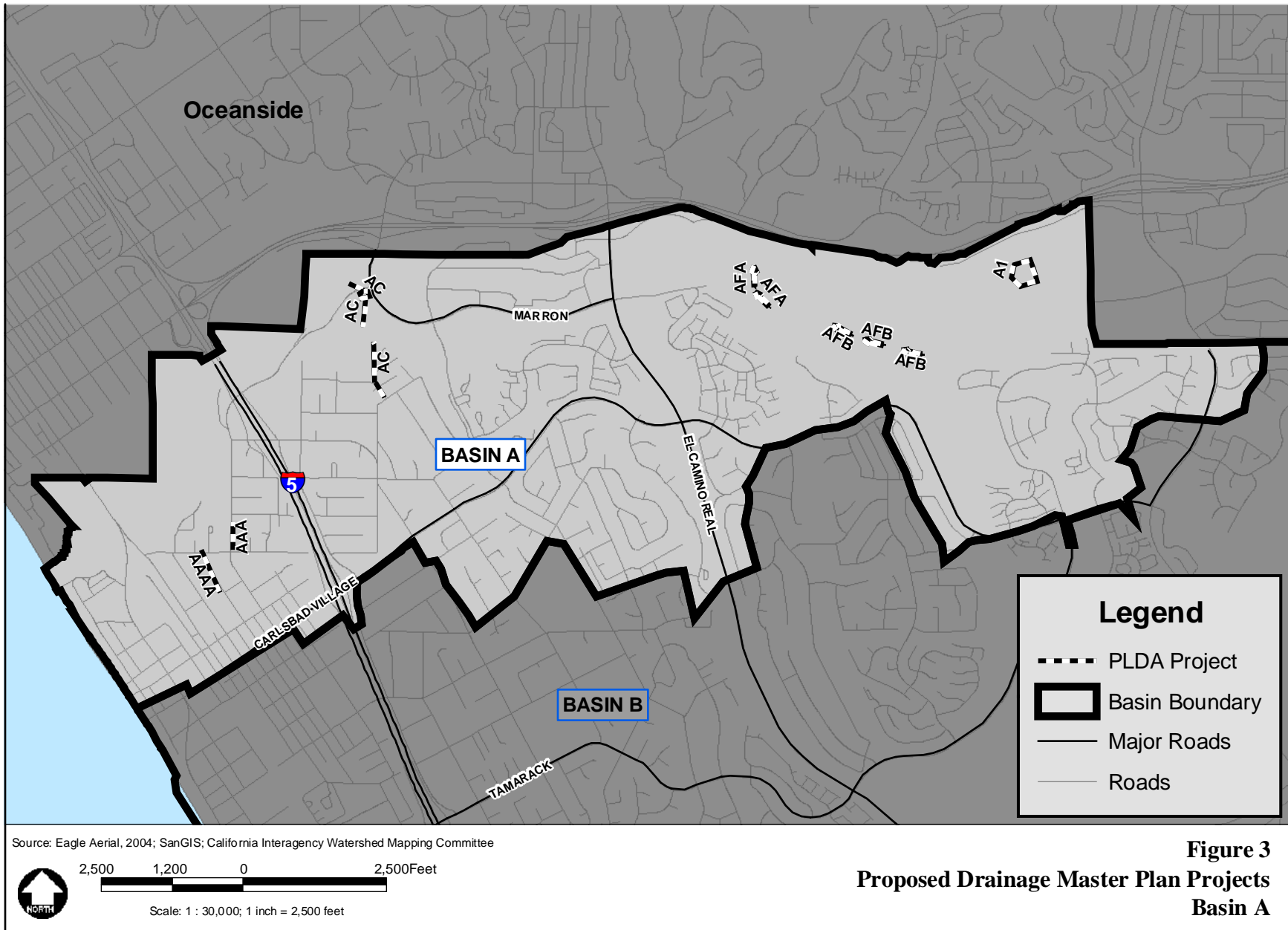


Figure 3
Proposed Drainage Master Plan Projects
Basin A

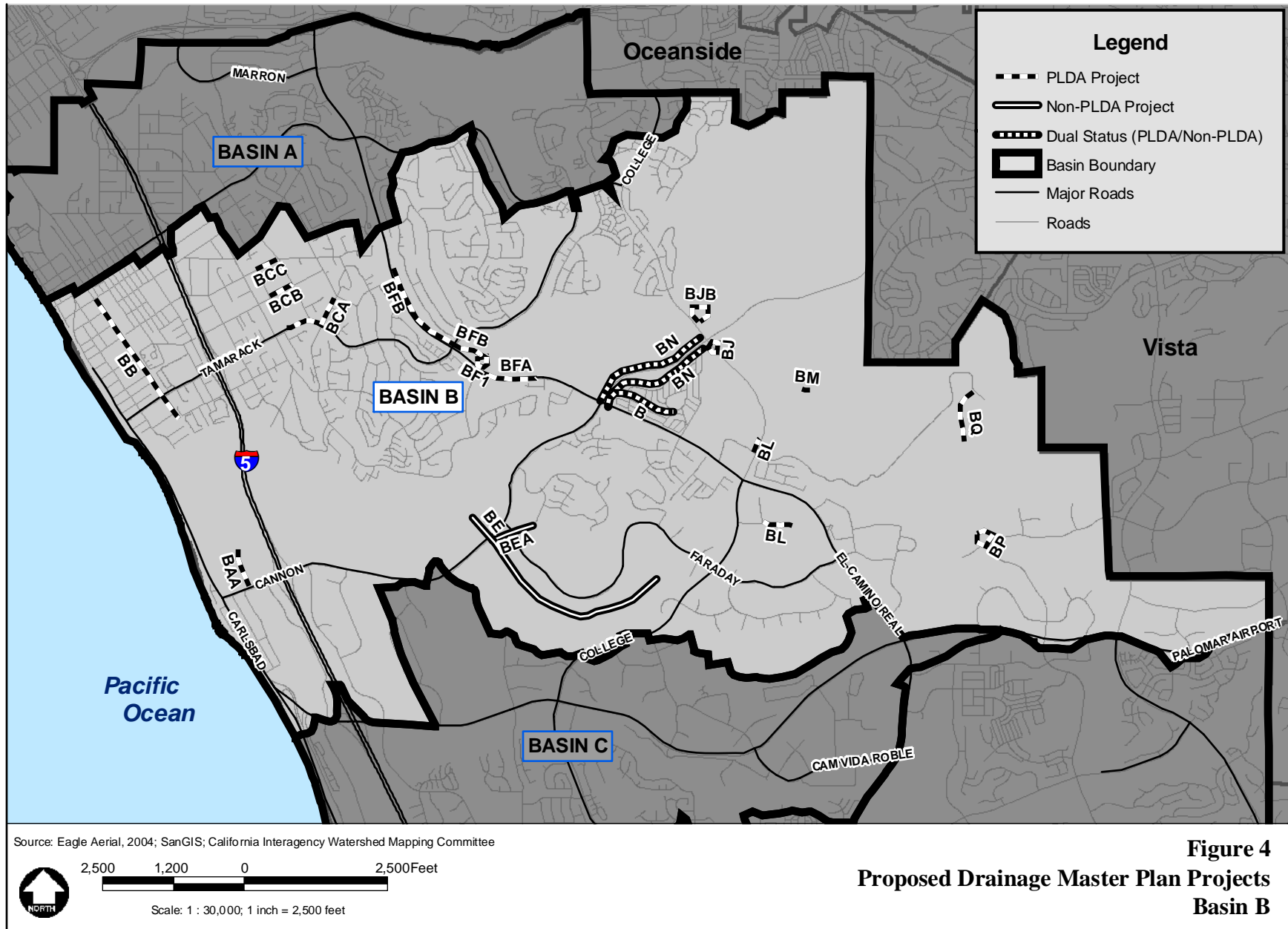


Figure 4
Proposed Drainage Master Plan Projects
Basin B

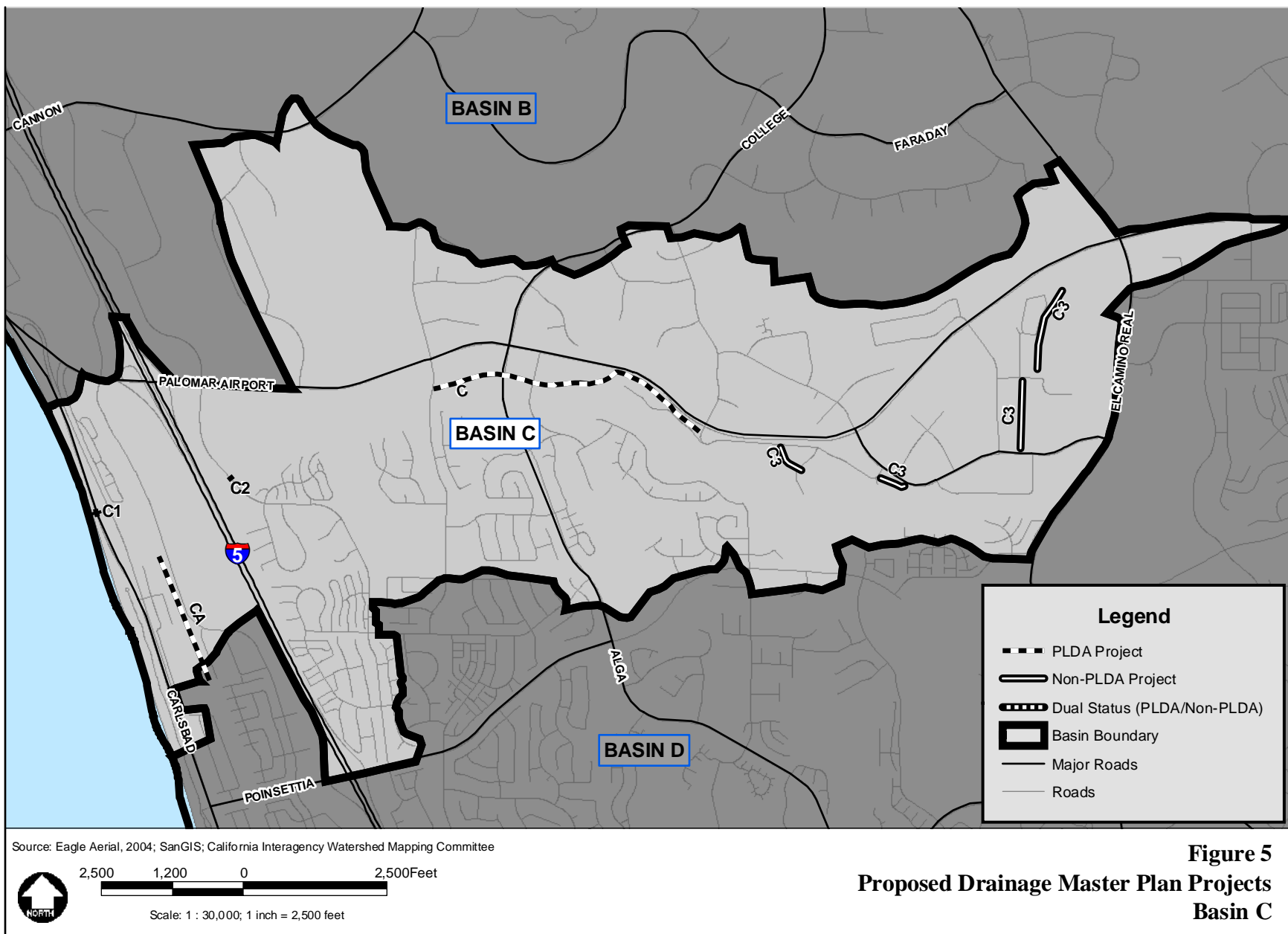
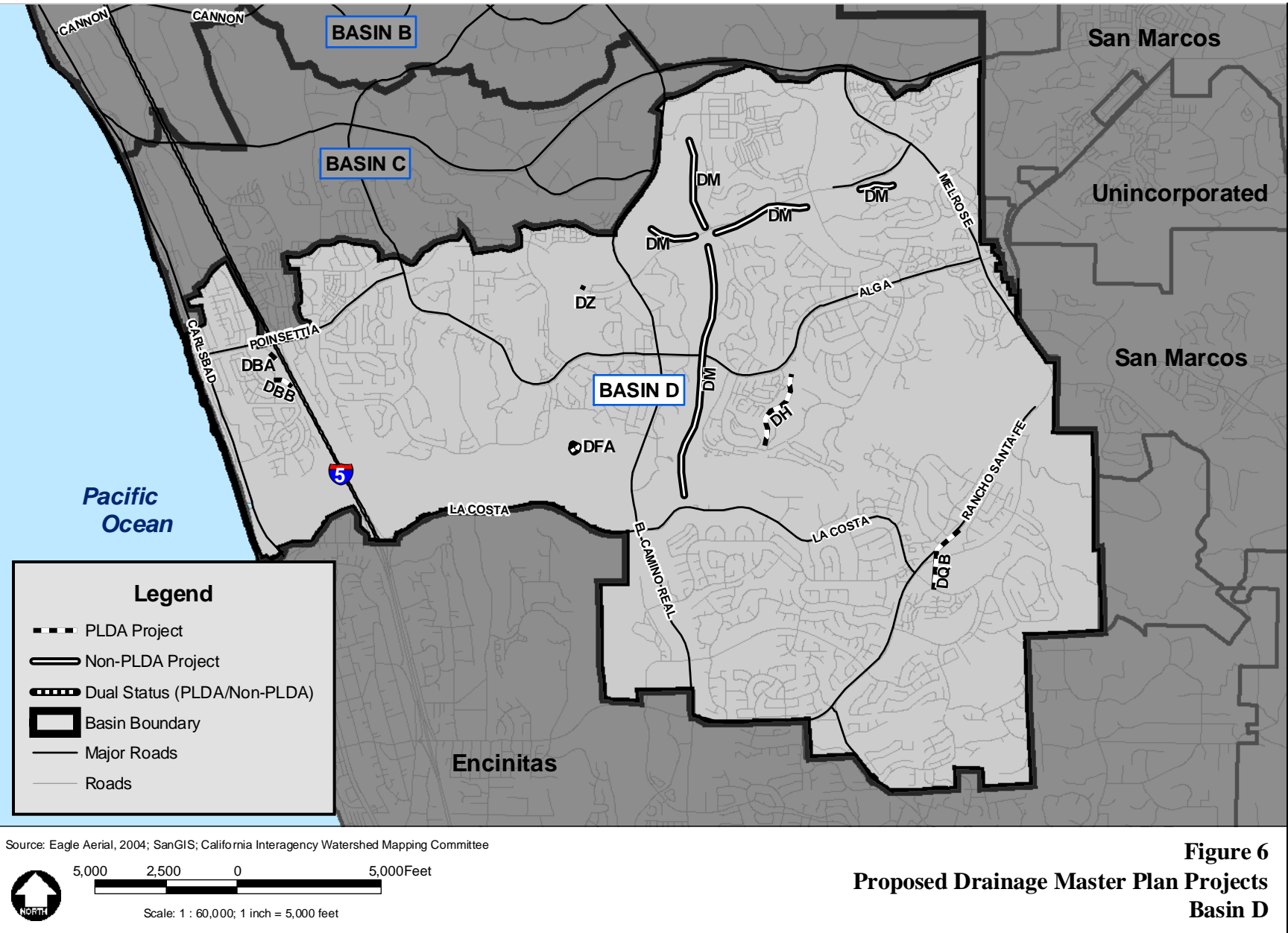


Figure 5
Proposed Drainage Master Plan Projects
Basin C



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Basin C – Encinas Creek Watershed

Encinas Creek originates 3,000 feet east of El Camino Real in a small drainage area behind an industrial park and extends in a channel west towards the Pacific Ocean. The watershed, referred to as Basin C in the DMP Update, covers an area of approximately 5 square miles (3,434 acres) (CWN 2006). The drainage course generally parallels Palomar Airport Road and extends for 3 miles just south of this roadway. Encinas Creek does not discharge to a lagoon but rather flows into the Pacific Ocean after crossing I-5 and Carlsbad Boulevard (CWN 2006). Basin C consists mainly of residential land uses, with high-density residential focused around the coast, and low- and medium-density residential located just east of I-5. The eastern portion of the basin near Palomar Airport is planned for industrial uses. Industrial uses are planned to constitute 35 percent of the basin land uses and multiple industrial and office parks have already been constructed. The open space allocation for this basin is approximately 13 percent of the total area.

Basin D – Batiquitos Lagoon Watershed

San Marcos Creek and Encinitas Creek are two major drainage conveyances that form the Batiquitos Lagoon watershed, referred to as Basin D in the DMP Update. The entire drainage area encompasses 56 square miles (35,840 acres) (CWN 2006). San Marcos Creek originates in the coastal mountain range northeast of San Marcos, while Encinitas Creek originates in the mountains southwest of San Marcos. Both creeks discharge into Batiquitos Lagoon, which extends 2.6 miles to the Pacific Ocean and covers approximately 0.95 square miles (600 acres). The capacity of the lagoon allows it to provide considerable storage of storm water before discharging to the Pacific Ocean. Residential land uses dominate the basin. Commercial facilities are located along I-5, including local retail centers scattered throughout the basin. A total of 110 acres have been set aside in the basin for future industrial uses. The open space allocation is 32 percent of the basin and is concentrated around the lagoon and tributaries.

1.2.2 Purpose and Need

Rapid growth in Carlsbad and aging existing infrastructure in more established areas of the City have resulted in the need to reassess existing storm drain infrastructure and provide additional facilities to accommodate storm flows from new developments. The proposed project involves updating the City's existing MDSWQMP and revising the existing PLDA program. The DMP Update would include both PLDA and non-PLDA projects within the City, as well as proposed infrastructure operation and maintenance activities. The PEIR would evaluate the potential environmental impacts of the proposed DMP projects and anticipated operation and maintenance activities. The level of analysis is anticipated to differ for each of the components, based on the level of detail available during preparation of the PEIR. Those components that are further in the design process (e.g., project components B and BN related to the work in Agua Hedionda and Calavera creeks, as identified in Tables 1 and 2) will have more detail available for analysis within the document and will therefore be addressed at a project level, while others still in the planning phase or early in the design process may have less detail available and will necessarily be covered at a program level.

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The proposed project would accomplish the following goals:

- Assess existing PLDA facilities, identify infrastructure deficiencies, and determine additional PLDA facilities required to accommodate storm flows from future developments
- Develop three alternative PLDA fees and recommend an optimum fee program
- Identify non-PLDA projects necessary to accommodate the City's anticipated drainage infrastructure needs to rehabilitate and replace aging infrastructure and accommodate generalized future development
- Identify long-term anticipated infrastructure operation and maintenance activities

1.2.3 Project Description

The DMP Update is a comprehensive planning document prepared to assess existing storm drain infrastructure, identify anticipated improvements required to accommodate storm flows from future developments within the City, and develop a PLDA fee program to ensure the construction of such improvements. The DMP Update also provides an assessment of master plan funded drainage facilities, including both proposed and existing facilities that are now considered for rehabilitation, and identifies CIP projects related to drainage facilities. These drainage facilities and operations and maintenance activities would not receive funding from the revised PLDA fee program developed as part of the proposed DMP Update. Within the DMP Update, these facilities are identified as non-PLDA projects that are deemed essential for the proper function of the City's drainage infrastructure.

Based on the level of detail in the information available at the time of preparation of the PEIR, PLDA and non-PLDA projects will either be evaluated at a project level or a program level. Operation and maintenance activities will be evaluated at a program level in the PEIR.

Proposed PLDA and non-PLDA projects identified in the DMP Update would involve drainage infrastructure components and activities including, but not limited to:

- RCP pipelines (enclosed steel reinforced concrete pipeline for conveyance of storm water)
- Concrete trapezoidal channels (open steel reinforced concrete channels for conveyance of storm water)
- Drainage inlets (concrete structures that collect surface water through a side opening or grate)
- Manhole cleanouts (concrete access openings, measuring 36 inches or less in diameter, that allow maintenance of shallow culverts or pipelines)
- Junction structures (concrete access openings that allow maintenance of large-diameter culverts [trunk lines greater than 36 inches] or pipelines)

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- Gabion structures (woven wire mesh baskets containing stone that reduce water velocity and erosion and are used as soil-retaining structures, weirs, or drop structures)
- Sediment basins (impoundment structures designed to promote longer detention time to allow for deposition of sediment within the basin and remove sediment from water prior to release)
- Erosion and scour protection (energy dissipation devices, such as berms, rock slope protection, or concrete impact dissipation units, that have the ability to reduce erosive velocities and the potential of runoff to carry away material from a channel bed or bank through mechanical means)
- Dredging (excavation of soil material for the purpose of cleaning, deepening, or widening a waterway)
- Slope stabilization (treatment measures that prevent dislodging of soil material from an inclined soil surface, such as chemical emulsifiers, mechanical stabilizers [e.g., geo-grids], or vegetative treatment)

Table 1 is a preliminary list of potential PLDA drainage infrastructure projects that have been identified to date, as required to accommodate storm flows resulting from future developments within the City. A preliminary list of potential non-PLDA projects and specific anticipated operations and maintenance activities are identified in Table 2. The locations of these proposed projects are also shown in Figures 3 through 6. As the DMP Update design progresses, however, proposed project descriptions may be modified, or additional drainage components may be identified. Additional projects could consist of components including, but not limited to, those identified above.

Operation and maintenance of existing and proposed PLDA and non-PLDA projects would be an essential component for the proper and efficient function of City infrastructure. Similar to the non-PLDA projects described in Table 2, these activities would not receive funding from the revised PLDA fee program.

The specific operation and maintenance activities have been grouped into the following categories, which are more fully described below:

- (1) Inlet/Outlet and Channel Maintenance
- (2) Existing Facilities Repair
- (3) Facility Upgrades (Non-capacity Related)
- (4) Culvert Replacement and Roadway Rehabilitation
- (5) Bridge Rehabilitation/Replacement
- (6) Storm Drain infrastructure
- (7) Sedimentation/Retention/Water Quality Basin Maintenance and Repair
- (8) Jurisdictional Dam Operation and Maintenance

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Type 1: Inlet/Outlet and Channel Maintenance

Routine maintenance activities are necessary within inlet/outlet structures, as well as channels themselves. Activities could include vegetation control (native and nonnative species); tree trimming; and/or debris removal including trash, rock and sediment removal. Maintenance required for the control of vegetation, sand, silt, debris, and other obstructions to outlets would typically be conducted on an annual basis; however, these activities may be performed more frequently as areas of concern are reported throughout the season.

Vegetation control is required within drainage facility bottoms, banks, and roads to maintain drainage design flow or to conduct facility inspections. Vegetation control within drainage facilities would typically be conducted using mechanical means, manual labor, or chemical application. Mechanical means include using equipment such as a gradall and/or backhoe along the roadway shoulder, which removes vegetation in a manner that avoids fill activity (e.g., scooping with bucket). Material would be placed in haul trucks and disposed of in approved locations. Manual labor includes the use of handheld tools such as chainsaws, mechanical mower, shovels, etc. Chemical application would be conducted infrequently and only in dry conditions. Application would only be used in areas surrounding guardrails, signs, and dry ditches where flow is restricted to the point that the roadway may become flooded.

The removal of trees or branches in imminent danger of falling or likely to fall during high flows, fallen trees obstructing flow, and associated debris would be performed on an as-needed basis. Trimming, pruning, shaping, or removal of trees would be conducted by a qualified tree trimmer. Stumps would be removed to 8 inches below the surface, when necessary.

Trash and debris clearing is necessary at inlets/outlets and within channels to maintain drainage facility design capacity. Trash and debris would be removed with mechanical equipment from the roadway shoulder or by manual labor. The removal of sediment and trimming of vegetation typically extends less than 20 feet from the pipe inlet/outlet to minimize impacts to the surrounding environment.

Erosion from storm water runoff results in an accumulation of sediment around existing drainage facilities, reducing the hydraulic flow of these facilities. To increase flow in the drainage facilities, it is necessary to periodically remove accumulated sediment. The removal of sediment would be limited to the minimum necessary to restore the waterway in the immediate vicinity of the drainage facility but would not extend outside existing channel or inlet/outlet structures. Sediment removal would typically be conducted by a gradall and/or backhoe from the roadway shoulder. Where feasible, an articulating front end loader (i.e., Caterpillar 950) would be used. The bucket would be extended down and sediment or debris would be scooped out, avoiding the discharge of fill into the waterway. Sediment and debris would then be placed in haul trucks and disposed of in approved locations. At drainage inlets or junction structures, where confined space limits access to larger equipment, vacuum trucks would be utilized to vacuum out sediment or debris. In addition, sediment could also be removed from small cross culverts by hand, using shovels.

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Type 2: Existing Facilities Repair

Repairs to existing facilities include work related to stormdrains, culverts, inlets/outlets, channels, brow ditches, basins, and existing erosion control features (e.g., fiber rolls, silt fences, erosion control blankets, hydroseed, and structural Best Management Practices (BMPs), such as sediment/detention basins, bio-strips, bioswales, and check dams). Activities for roadway repair associated with drainage structures include leveling of soil surface, filling ruts, and repairing the roadway shoulder or dike. This work would typically be completed from the adjacent lane of the roadway and would not extend outside of the paved shoulder, with the exception of pulling out excess deposition or material washed from adjacent slope areas. It could also be necessary to perform mechanical repair or replacement of structural BMPs, including revegetating bio-strips and bio-swales. Facility repair could also include, but not be limited to, repairing scoured channel bottoms, bridge piers and abutments, damaged headwalls, concrete aprons, damaged spillways, curb inlets, brow ditches, broken pipes, and energy dissipaters. Repairs to paved channel bottoms are currently conducted by using a front-end loader, trackhoe, backhoe, or a small dozer. While some of the equipment can work from the side of the roadway to access the channel, some work may need to be done in the channel itself depending on accessibility, the size of the channel, etc. Repair of unpaved channel bottoms could include the installation of riprap or concrete lining, depending on the amount of damage. Rock/riprap removal and placement would be most commonly completed using a front-end loader or a motor grader, and work could be accomplished from the roadway shoulder by either picking up or placing rock/riprap into/from the channel.

Type 3: Minor Facility Upgrades (Non-capacity Related)

Facility upgrades include projects such as minor sediment/detention basin upgrades (i.e., improvements may result in minor increase in size and/or depth for maintenance purposes only), culvert replacements (increase in size, diameter, or type of culvert), culvert slip lining (to maintain line and grade where feasible), access to drainage facilities, construction and upgrades to erosion control features and structural BMPs, and implementation of new erosion control devices adjacent to existing culverts or bridges (fiber rolls, wattles, mats, erosion control blankets, rock slope protection, silt fences, hydroseed, etc.). Check dams and stilling basins require excavating soil within the wash or channel and its bank, and placing concrete or rock slope protection (bank armoring). Typical material used for the placement of rock slope protection would be either Class II base or riprap (18-inch-diameter). This activity would be accomplished with a backhoe, loader, gradall, and/or small dozer. Temporary access to the channel may be necessary. This activity would only be conducted in the event that the roadway was threatened and in risk of closure. Sediment catch basins could require excavating areas on the inlet side of culverts or ditches, and constructing dikes to direct the flow of water.

Type 4: Culvert Replacement and Roadway Rehabilitation

Culvert replacement and roadway rehabilitation consist of replacing/retrofitting failed culverts with the same size/diameter culvert and extending culverts. In addition, rock slope protection may be included to minimize runoff velocities at the outfall. Replacement work typically

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requires excavation above existing pipes, removing and replacing pipes, and backfilling of new culverts with a paved roadway section. The roadway section would be constructed of asphalt, concrete, or Portland cement concrete to match existing conditions. Rock slope protection would be typically placed at the outfall of the culvert to aid in velocity reduction, thereby minimizing scour downstream. Temporary access routes and staging areas used for equipment, as well as material storage and spoils disposal, would also be included.

Type 5: Bridge Rehabilitation/Replacement

Bridge rehabilitation consists of removing the asphalt concrete deck or replacing decks; reconstructing approaches, bridge abutments, and column protection; applying a seal coat; and sand blasting the underside of the bridge to inspect for damage. In addition, replacement of dikes, barrier rail, and other appurtenances that direct runoff to an inlet must be maintained to prevent runoff from ponding and creating a safety hazard along roadways. Bridge replacement consists of removing and replacing entire bridge structures and pillars with a new bridge structure, activities that require excavation. Temporary access roads may be required to access the area underneath bridge structures. Some bridge rehabilitation work may require installing temporary traffic detours across the bridge; detours would include construction of drainage structures to divert runoff from the construction site.

Type 6: Storm Drain Infrastructure

Curb inlets and junction structure replacement consists of replacing/retrofitting damaged or aging drainage inlets, sidewalk underdrains, manholes, and junction structures with the same size facility to provide safe access for maintenance personnel. Storm drain structure replacement consists of removing and replacing the entire structure and its appurtenances with a new drainage inlet, manhole, and/or junction structure. Removal of these features requires excavation and would be accomplished with a backhoe, loader, gradall, and/or small dozer. Backfill with Class II base, formwork, and concrete work would also be required to complete the task.

Type 7: Sedimentation/Retention/Water Quality Basin Maintenance and Repair

Basin maintenance and repair typically consist of removal activities such as vegetation and debris removal, including trash and other material. Maintenance required for concrete-lined basins includes the use of epoxy sealant, concrete patching of damaged areas, cleaning or replacement of inlet and outlet structures, and graffiti removal. Inspections and repairs are conducted on an annual basis; however, these activities may be performed more frequently since they are dependent on the amount of rainfall received during the season.

Maintenance required for unlined basins includes the removal of vegetation, sand, silt, debris, and other material. Maintenance typically requires the use of a gradall and/or backhoe for sediment removal. Where feasible, an articulating front end loader (i.e., Caterpillar 950) would be used and the removal of sediment would be limited to the minimum necessary to restore the basin to its design capacity. Sediment and debris would be removed, placed in haul trucks, and disposed of in approved locations. Side slopes would be repaired as the need arises.

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Type 8: Jurisdictional Dam Operations and Maintenance

The California Water Code entrusts the regulatory Dam Safety Program to the Department of Water Resources, Division of Safety of Dams (DSOD). The principal goal of this program is to prevent dam failure and thus safeguard life and protect property. Dams under State jurisdiction are an essential element of the California infrastructure that provides constant water supply integrity, as well as essential flood control. The Division inspects and evaluates each dam and reservoir during construction to verify compliance with the approved plans and specifications and to assure that changes or unforeseen foundation conditions are recognized and the design is modified as necessary. The Division inspects, monitors, and evaluates operational dams annually or more frequently as necessary to assure safety. The Division issues a Certificate of Approval for each dam and reservoir containing operational restrictions, if necessary, for safe use.

Dam maintenance typically includes inspections, repairs, rehabilitation and/or improvements, and documentation of all observations and activities. General inspections of outlet pipes and structures for leaks and deterioration, telemetry equipment, pumps, water treatment facilities, BMPs and spillways are typically carried out as part of a systematic inspection process. Other maintenance repairs and general housekeeping activities include minor channel and bank stabilization, resurfacing of the embankment slopes, trash and debris removal, and vegetation removal within the dam embankment and around the emergency spillway. Maintenance activities may also include rodent abatement, trimming and removal of vegetation from the access roads to the spillway and associated structures.

Rehabilitation and/or improvements include repairing the top and face of the dam structure and associated maintenance access roads, painting, lubrication or replacement of structural and/or mechanical components such as gates, valves or piping, and replacement of electrical equipment.

Dam operational activities include the quarterly “exercise of valves,” which encompasses the opening and closing of pipe valves to raise and lower the water surface elevation of the impounded water within Calavera Dam. Testing of primary, as well as secondary, equipment for drawdown of water is essential to the health and operation of the dam. For water supply reservoirs, the release of water is typically performed as a response to demand from downstream consumers. In the case of the Calavera Dam facility, the City intends to raise and lower the water surface elevation to maximize flood protection for downstream property owners. Documentation on the actual operations shall include data on reservoir levels, inflow and outflow, drainage system discharge and structural behavior. The operation of Calavera Dam as flood control facilities will be accomplished in compliance with the Annual Management and Daily Operations Plan for Lake Calavera, as prepared by the Carlsbad Municipal Water District.

1.2.4 Use of the PEIR

As defined by CEQA, a PEIR is proposed to analyze the first-tier effects of a Master Plan. A PEIR can be used for an agency program or series of actions that can be characterized as one large project. Typically, such a project involves actions that are closely related geographically

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(Cal. Code of Regs., Title 14, §15168(a)(1)), for agency programs (§15168(a)(3)), or as individual acts carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects that can be mitigated in similar ways (§15168(a)(4)). PEIRs generally analyze broad environmental effects of the program with the acknowledgement that site-specific environmental review may be required for individual aspects of portions of the program when they are proposed for implementation (§15168(a)).

To ensure CEQA compliance, the PEIR needs to include all content requirements normally included in a Project EIR, although the level of detail would be more general in nature in the PEIR, as compared to a Project EIR. The benefit of selecting the PEIR is that it can be used as a tiering document to facilitate preparation of environmental documentation for City Council to consider and approve individual projects as they come due for final CEQA compliance in accordance with the DMP Update project implementation schedule. Individual components proposed within the DMP Update are currently in different stages of design, and therefore different levels of detail are available for analysis within the PEIR. Some of the components that are further along in the design, including those identified for project-level analysis in Tables 1 and 2 (e.g., project components B and BN), will be evaluated at a project level within the PEIR, which is anticipated to provide adequate review for project approval without subsequent CEQA documentation. As design progresses on other components of the DMP Update, additional detail may become available and project level review may be provided within the PEIR. Proposed projects that are evaluated at a project level may not require additional environmental documentation if there are no substantial changes in the project description, no additional environmental impacts would occur, and no additional mitigation would be required. However, proposed or future projects covered at a program level may require additional environmental documentation, depending on the level of potential impact, such as an Environmental Impact Report, Negative Declaration, Mitigated Negative Declaration, or a Categorical Exemption. Preparation of an Initial Study would provide guidance concerning the level of potential impact and the appropriate type of environmental document needed to evaluate a specific project, if any.

PROJECT DESCRIPTION FOR THE CITY OF CARLSBAD
DRAINAGE MASTER PLAN UPDATE

Table 1: Draft Summary of Potential Master Plan PLDA Projects¹

Project Component ID ²	Project Name	Project Location	Project Description
PROGRAM LEVEL			
Basin A			
AC	Highland Drive Drainage Project	Northern end of Highland Drive and drains towards the Buena Vista Lagoon.	Construction of a 36-inch reinforced concrete pipe (RCP) with a proposed length of approximately 1,000 linear feet (LF), six drainage inlets, and three manhole cleanouts. This pipe would discharge to a proposed 600-foot-long trapezoidal channel and 36-inch RCP discharge outlet pipe. The facility would collect onsite runoff from the residential areas surrounding Highland Drive.
AAA	Jefferson Street Drainage Project	Begins south of the intersection of Jefferson Street and Knowles Avenue, flows in a southerly direction parallel to Jefferson Street, terminating at the corner of Jefferson Street and Laguna Drive.	Construction of a 36-inch RCP with a proposed length of approximately 550 LF, four drainage inlets, and one manhole cleanout. The facility would collect onsite runoff from the residential areas north of Laguna Drive.
AAAA	Madison Street Drainage Project	Begins at the intersection of Arbuckle Place and Madison Street, parallels Madison Street and terminates on Laguna Drive.	Construction of a 24-inch RCP with a proposed length of approximately 900 LF, three drainage inlets, two manhole cleanouts, and one junction structure. The facility would collect onsite runoff from adjacent residential areas and alleviate local ponding.
AFA	Hidden Valley Drainage Restoration and Enhancement Project	Northeast of the intersection of Via Cristobal and Via Libertad, adjacent to and northwest of Hidden Valley Park.	Proposed enhancement of a natural tributary to Buena Vista Creek. The natural tributary collects runoff from the open space, park, and residential areas and conveys runoff in a northerly direction for approximately 2,000 LF towards Buena Vista Creek. The natural tributary has vegetated banks with minor erosion around its perimeter. Within the confines of the conveyance there is sparse vegetation with minor to severe erosion. The proposed enhancement consists of gabion structures and side slope stabilization to minimize erosion and reduce runoff velocities within the tributary. A 12-foot-wide temporary gravel access road would be constructed adjacent to the project to allow for construction equipment access, inspections, and maintenance.

PROJECT DESCRIPTION FOR THE CITY OF CARLSBAD
DRAINAGE MASTER PLAN UPDATE

Table 1: Draft Summary of Potential Master Plan PLDA Projects¹ (continued)

Project Component ID²	Project Name	Project Location	Project Description
AFB	North Calavera Hills Drainage Restoration and Enhancement Project	Northeast of Carlsbad Village Drive and west of Tamarack Avenue.	Proposed enhancement of a natural tributary to Buena Vista Creek. The natural tributary collects runoff from the open space and the residential areas and conveys runoff in a northerly direction for approximately 3,600 LF, where it converges with Buena Vista Creek. The natural tributary has heavily vegetated banks with minor to severe erosion around the perimeter. In addition, within the confines of the conveyance, there is sparse to dense vegetation with minor to severe erosion. The proposed enhancement consists of gabion structures and side slope stabilization to minimize erosion and reduce runoff velocities within the tributary. A 12-foot-wide temporary gravel access road would be constructed adjacent to the project to allow for construction equipment access, inspections, and maintenance.
A1	Buena Vista Creek Sedimentation Basin Project	South of SR-78 Haymar Drive and west of College Boulevard within Buena Vista Creek.	Proposed construction of a sedimentation basin within Buena Vista Creek, identified as part of the Buena Vista Lagoon Sedimentation Plan. The facility would include an entrance and exit weir and vegetation where feasible. The basin would control onsite and channel runoff, reduce the amount of sediment transport within the tributary, and reduce the velocity of flow to minimize erosion potential downstream of the basin.
Basin B			
BB	Washington Street Drainage Improvements	The first segment begins at the intersection of Pine Avenue and Washington Street and turns east on Chestnut Avenue. The second segment begins at Acacia Avenue, then turns east on Tamarack Avenue.	Construction of an 18-inch and 36-inch RCP with proposed lengths of approximately 1,100 LF and 1,700 LF, respectively, with five drainage inlets, four manhole cleanouts, and two junction structures. The proposed facilities would capture storm water runoff from behind adjacent residential areas and alleviate localized flooding.
BAA	Cannon Road Drainage Improvements	Begins at Cannon Road and extends north on the Encina Power Plant property.	Construction of a 51-inch RCP with a proposed length of approximately 1,200 LF with two manhole cleanouts. The proposed facility would augment drainage capacity in this area and would alleviate localized runoff from adjacent industrial areas.

PROJECT DESCRIPTION FOR THE CITY OF CARLSBAD
DRAINAGE MASTER PLAN UPDATE

Table 1: Draft Summary of Potential Master Plan PLDA Projects¹ (continued)

Project Component ID²	Project Name	Project Location	Project Description
BCA	Park Drive/ Tamarack Avenue Drainage Project	Begins at the intersection of Sunny Hill Drive and Alder Avenue. The alignment travels northwest to park Drive, turns south to Tamarack Avenue and then turns west, terminating at the intersection of James Drive and Tamarack Avenue.	Construction of a 24-inch RCP with a proposed length of approximately 2,900 LF, eight drainage inlets, nine manhole cleanouts, and two junction structures. The facility would collect onsite drainage from residential areas surrounding Park Drive and Tamarack Avenue to alleviate street ponding and potential flooding conditions.
BCB	Magnolia Avenue Drainage Project	Begins at the intersection of Magnolia Avenue and Valley Street, proceeds southwest along Magnolia Avenue, and terminates at the corner of Brady Circle and Magnolia Avenue.	Construction of a 30-inch RCP with a proposed length of approximately 925 LF, four drainage inlets, and three manhole cleanouts. The facility would drain low areas of Valley Street and Magnolia Avenue and collect the runoff from the surrounding residential areas.
BCC	Chestnut Avenue Drainage Project	Begins at the intersection of Chestnut Avenue and Valley Street, runs southwest along Chestnut Avenue, and terminates east of the intersection of Highland Drive and Chestnut Avenue.	Construction of a 36-inch RCP with a proposed length of approximately 925 LF, four drainage inlets, and three manhole cleanouts. The facilities would reduce storm event flooding on a portion of Chestnut Avenue and collect onsite runoff from surrounding residential areas.
BFB	El Camino Real Drainage Project	Begins at Chestnut Avenue and extends southerly, parallel to El Camino Real. The RCP portion then begins and extends south towards a temporary sedimentation basin (Basin BF1).	Enhancement of approximately 3,800 LF of a natural channel and construction of a 48-inch RCP with a proposed length of approximately 800 LF, three drainage inlets, and one junction structure. The facility would convey runoff collected in existing earthen ditches that run southerly along both sides of El Camino Real.
BF1	Kelly Drive Water Quality Basin Project	Northeast of the intersection of Kelly Drive and El Camino Real.	Proposed construction of a sedimentation basin downstream of natural tributary Project BF and Project BFB. The facility would incorporate an entrance and exit weir and vegetation where possible. The basin would control onsite and channel runoff, reduce the amount of sediment transport within the flow of the natural tributary, and reduce the velocity of the flow to minimize the erosion potential downstream of the basin.

PROJECT DESCRIPTION FOR THE CITY OF CARLSBAD
DRAINAGE MASTER PLAN UPDATE

Table 1: Draft Summary of Potential Master Plan PLDA Projects¹ (continued)

Project Component ID ²	Project Name	Project Location	Project Description
BFA	Country Store Storm Drain Project	Begins west of the intersection of Lisa Street and El Camino Real, follows the alignment of El Camino Real, and terminates east of the intersection of Kelly Drive and El Camino Real.	Construction of a 42-inch RCP with a proposed length of approximately 1,600 LF, nine drainage inlets, and five manhole cleanouts. The facility would collect onsite runoff from adjacent areas on the south side of El Camino Real and convey it westward towards the existing concrete channel extending from sedimentation basin BF1.
BJ	Rancho Carlsbad Sedimentation Basin Project	Southeast corner of College Boulevard and Cannon Road.	Proposed construction of a sedimentation basin, designed to contain 49 acre-feet of water during a 100-year storm event, and a 270-foot-long reinforced concrete box culvert (3-foot by 6-foot).
BJB	College Boulevard Sedimentation Basin Structural Improvements Project	Northeast corner of Cannon Road and College Boulevard.	Proposed modifications to the outflow structure of sedimentation basin BJB and the inflow structure to Calavera Creek. Modifications are required for the purposes of metering flow, reducing flow velocity and potential scour, and improving overall conveyance.
BL (Upstream & Downstream Portions)	College Boulevard Drainage Project	<i>Upstream</i> - Begins east of the intersection of Fermi Court and Salk Avenue, conveys runoff in northwesterly direction, and connects to an existing RCP. <i>Downstream</i> - College Boulevard from El Camino Real to Agua Hedionda.	The Upstream Portion would involve a 39-inch RCP with a proposed length of approximately 800 LF, four drainage inlets, one manhole cleanout and two junction structures. The Downstream Portion would involve a 90-inch RCP with a proposed length of approximately 600 LF, four drainage inlets, one manhole cleanout, one junction structure, and an outlet head wall. The outlet head wall would be configured to pass through a new bridge abutment proposed over College Boulevard. The Downstream Portion would connect the existing drainage facility located on the northwest side of the intersection of El Camino Real and College Boulevard and convey runoff to Agua Hedionda Creek.
BM	Cantarini Box Culvert Project	Located in an unnamed tributary to Agua Hedionda Creek, east of College Boulevard.	Construction of a 260-foot-long, 5-foot by 12-foot reinforced concrete box culvert extending under two local streets. The construction would include inlet/outlet headwalls and slope protection.
BP	Faraday Flood Retention Facility	South of the future Faraday Avenue extension, tributary to Agua Hedionda Creek.	Proposed sedimentation basin to control runoff, reduce sediment transport and erosive velocities, and contain 49 acre-feet of water during a 100-year storm event. The basin will drain through a 28-foot-long, 4.3-foot by 5.7-foot reinforced concrete box culvert that discharges to a riprap field connected to an existing drainage.

PROJECT DESCRIPTION FOR THE CITY OF CARLSBAD
DRAINAGE MASTER PLAN UPDATE

Table 1: Draft Summary of Potential Master Plan PLDA Projects¹ (continued)

Project Component ID²	Project Name	Project Location	Project Description
BQ	Sunny Creek Road Restoration and Enhancement Project	Begins on the west side of the Squires Dam just east of Sunny Creek Road and conveys runoff in a southwesterly direction for approximately 800 LF towards Agua Hedionda Creek.	Proposed enhancement of a natural tributary that conveys runoff from open area and the Squires Dam. The proposed enhancement consists of gabion structures and side slope stabilization to minimize erosion and reduce runoff velocities within the tributary. A 12-foot-wide temporary gravel access road would be constructed adjacent to the project to allow for construction equipment access, inspections, and maintenance.
Basin C			
C1	Carlsbad Boulevard South Drainage Improvements	Begins in an open area and extends west from Encinas Creek.	The project would involve the construction of a multiple-span bridge with a length of 54 feet and an earthen bottom to replace the existing aging facility. Runoff from Encinas Creek would flow underneath the bridge in a westerly direction towards the Pacific Ocean. Open trench construction techniques would be monitored closely to minimize impacts to the railroad right-of-way east of the proposed alignment. This project would allow for capacity in Encinas Creek to accommodate a 100-year peak flow.
C2	Paseo Del Norte Drainage Improvements	Begins in an open area and extends west from Encinas Creek.	Construction of a 10-foot by 4-foot reinforced concrete box culvert with a proposed length of approximately 90 LF. The proposed improvement would provide additional capacity to the existing bridge under the lanes of Paseo Del Norte to alleviate localized flooding.
CA	Avenida Encinas Drainage Improvements	Begins south of the Poinsettia Lane Commuter Rail Station and travels north along the west side of the track.	Construction of a concrete trapezoidal channel with a proposed length of approximately 1,000 LF. The proposed improvement would provide a drainage outlet that would convey runoff from an open area slated for development and alleviate localized flooding, runoff, and erosion.
C	Encinas Creek Restoration and Enhancement Project	Natural channel between Hidden Valley Road and Palomar Oaks Way.	Proposed enhancement consists of gabion structures and slide slope stabilization (geo-textile fabric) to minimize erosive and reduce runoff velocities. The construction of an adjacent temporary 12-foot-wide gravel access road would be required.
Basin D			
DBA	Poinsettia Village Drainage Improvements	Follows the alignment of the I-5 southbound access ramp by Poinsettia Lane, terminating at an existing 36-inch RCP.	Construction of a 30-inch RCP with a proposed length of approximately 360 LF, two manhole cleanouts, and two junction structures. This facility would convey runoff from adjacent residential areas to reduce potential flooding between the southbound I-5 access ramp from Poinsettia Lane and Poinsettia Village Mall.

PROJECT DESCRIPTION FOR THE CITY OF CARLSBAD
DRAINAGE MASTER PLAN UPDATE

Table 1: Draft Summary of Potential Master Plan PLDA Projects¹ (continued)

Project Component ID ²	Project Name	Project Location	Project Description
DBB	Avenida Encinas Drainage Project	Follows the alignment of Avenida Encinas and terminates at the intersection of Avenida Encinas and Loganberry Drive.	Construction of a 30-inch RCP with a proposed length of approximately 720 LF, three manhole cleanouts, and one junction structure. The facility would convey runoff from Avenida Encinas to minimize potential flooding and extend the existing 30-inch RCP.
DFA	Batiquitos Lagoon Retention/ Detention Basin Project	Northwest of the intersection of La Costa Avenue and El Camino Real.	Construction of a sedimentation basin that discharges directly into Batiquitos Lagoon. The sedimentation basin would be fed by an existing 72-inch RCP. The facility would include an entrance and exit weir, as well as vegetation, where appropriate. The basin would control onsite and culvert runoff velocities and reduce the amount of sediment transport within the flow of the tributary, thus minimizing the erosion potential downstream of the basin.
DH	Altiva Place Restoration and Enhancement Project	Originates south of the intersection of Alga Road and Paseo Candelero and extends toward the intersection of Alicante Road and Altiva Place.	Proposed enhancement of approximately 3,111 LF of a natural channel that conveys runoff from the residential areas south of Alga Road and adjacent open areas. A 12-foot-wide temporary gravel access road would be constructed adjacent to the project to allow for construction equipment access, inspections, and maintenance.
DQB	La Costa Town Center Drainage Improvements Project	Begins south of Rancho Santa Fe Road and terminates in a northeast fork of Encinitas Creek that runs along La Costa Avenue.	Construction of a 36-inch RCP with a proposed length of approximately 2,500 LF, five manhole cleanouts, and one junction structure. The facility would convey runoff from the proposed La Costa Town Center and discharge to an existing facility.
DZ	Poinsettia Lane Bridge Project	West of Skimmer Court on Poinsettia Lane	Proposed construction of a five-span bridge designed as a conventional two-lane highway over an existing natural tributary.
PROJECT LEVEL			
Basin B			
B	Agua Hedionda Creek Dredging and Improvement Project	Agua Hedionda Creek within Rancho Carlsbad residential community, continues along Agua Hedionda Creek, and terminates at the west edge of Cannon Road Bridge.	Proposed channel improvements along approximately 3,500 LF of an existing tributary that conveys runoff from Agua Hedionda Creek and adjacent open areas. The project would involve dredging portions of Agua Hedionda Creek to widen the creek at its confluence with Calavera Creek, improve conveyance capacity of the channel for containment of a 100-year flood event, collect onsite and offsite storm water runoff, and minimize flooding of segments of Agua Hedionda Creek adjacent to the Rancho Carlsbad residential community. Proposed work would entail dredging, dewatering, and disposal of sand and sediment from within the channel banks, bridge protection, and onsite restoration where appropriate.

PROJECT DESCRIPTION FOR THE CITY OF CARLSBAD
DRAINAGE MASTER PLAN UPDATE

Table 1: Draft Summary of Potential Master Plan PLDA Projects¹ (continued)

Project Component ID²	Project Name	Project Location	Project Description
BN	Calavera Creek Flood Control Improvement Project	Calavera Creek Project (phase one) begins at the existing box culvert at College Boulevard and Cannon Road, along Calavera Creek within the Rancho Carlsbad residential community to its confluence with Agua Hedionda Creek. The Parallel Facility (phase two) begins at the box culvert at College Boulevard and Cannon Road, flows parallel to Cannon Road, and discharges to Agua Hedionda Creek northeast of the intersection at El Camino Real.	Phase one proposes the removal of an existing weir wall on the northwest bank of Calavera Creek and bank stabilization along the creek. Phase two proposes an 84-inch RCP, approximately 3,600 LF long; a structural connection to an existing box culvert; nine special (large diameter) cleanouts; a wingall with apron; and rock slope protection. The proposed facility would convey runoff collected in Basin BJ towards Agua Hedionda Creek to reduce the flow volume in Calavera Creek.

¹ As the DMP Update design progresses, proposed project descriptions may be modified, or additional drainage components may be identified.

² Component IDs use the first letter to indicate the drainage basin in which the project would be located.

PROJECT DESCRIPTION FOR THE CITY OF CARLSBAD
DRAINAGE MASTER PLAN UPDATE

Table 2: Draft Summary of Potential Non-PLDA/CIP Projects¹

Project Component ID ²	Project Location	Project Description
PROGRAM LEVEL		
Basin A		
<i>Non-PLDA Projects</i>		
No specific non-PLDA projects have been identified in Basin A at this time.		
<i>CIP Projects³</i>		
A-CIP-1	Miscellaneous Road Subdrains (Project Number 3681)	The storm drains located at Linda Lane are experiencing surface/subsurface drainage problems. The site would be investigated and solutions recommended. The repairs would reduce hazards from slips and falls, as well as relieve health hazards due to current ponding.
A-CIP-2	Cynthia Lane Storm Drain Project; Cynthia Lane near I-5	The existing 18-inch CMP would be replaced with a 24-inch RCP to increase drainage capacity to convey peak storm water runoff.
A-CIP-3	Carlsbad Boulevard Storm Drain Replacement Project; between the SDNR track and Carlsbad Boulevard	Approximately 350 LF of 18-inch CMP would be replaced with an 18-inch RCP, as well as additional drainage inlets. The existing CMP is corroding and runs under a private structure in a previously vacant street right-of-way. A sinkhole has recently developed over the pipe, which could potentially lead to damage to the private structure. The new pipe would reduce the potential of local flooding on Carlsbad Boulevard.
A-CIP-4	Ridgecrest Drainage Improvements Project; Ridgecrest Drive	The existing inlet is located at the low point in Ridgecrest Drive and cannot adequately drain the area during storm events, resulting in flooding at adjacent residences. The inlet and approximately 130 LF of 18-inch CMP would be replaced by a new inlet structure and an 18-inch RCP pipe to reduce flooding in the area.
Basin B		
<i>Non-PLDA Projects</i>		
BE	South of Van Allan Way on south side of Agua Hedionda Creek	The project would involve enhancement and ongoing maintenance of an enhanced natural channel flowing through City property in a golf course on the south side of Agua Hedionda Lagoon.
BEA	Begins northeast of Faraday Avenue and extends southwest to the south side of Agua Hedionda Creek	The project would involve enhancement and ongoing maintenance of an enhanced natural channel.
BL	Bridge over Agua Hedionda Creek at College Boulevard	Bridge construction at Agua Hedionda Creek has not been completed. However, the tributary conveys a significant amount of sand and sediment requires maintenance to ensure continued capacity for a 100-year flood event.

PROJECT DESCRIPTION FOR THE CITY OF CARLSBAD
DRAINAGE MASTER PLAN UPDATE

Table 2: Draft Summary of Potential Non-PLDA/CIP Projects¹ (continued)

Project Component ID ²	Project Location	Project Description
<i>CIP Projects³</i>		
B-CIP-1 and B-CIP-2	Miscellaneous Road Subdrains (Project Number 3681)	Facilities are located at Calavo Court and on Park Drive and Cove Drive. The storm drains at these locations are experiencing surface/subsurface drainage problems. The site would be investigated and solutions recommended. The repairs would reduce hazards from slips and falls, as well as relieve health hazards due to current ponding.
B-CIP-3	Highland Drive Drainage Improvements Project; Highland Drive between Pine Avenue and Basswood Avenue	A new 18-inch RCP would be installed along Highland Drive from the low point into an existing drainage channel. The new pipe would reduce flooding of private property downstream of Highland Drive.
B-CIP-4	Kelly Drive Drainage Improvements; Kelly Drive east of Hillside Drive	The project would involve the reconstruction of approximately 260 LF of an existing concrete-lined trapezoidal channel and would be located behind a row of homes on the south side of Kelly Drive. In addition, approximately 780 LF of concrete slope protection would be added. The existing concrete channel is deteriorating and is being undermined by erosion in one location.
Basin C		
<i>Non-PLDA Projects</i>		
C3	Southwest corner of Palomar Airport Road and El Camino Real	The project would involve channel dredging and long-term maintenance including period inspections; dewatering, sediment, debris and vegetation removal; and repair of eroded surfaces.
<i>CIP Projects³</i>		
No specific CIP projects have been identified in Basin C at this time.		
Basin D		
<i>Non-PLDA Projects</i>		
DFA	Northwest of the intersection of La Costa Avenue and El Camino Real	The project would involve long-term maintenance of a sediment basin to maintain capacity and operational efficiency, including periodic inspections, dewatering, sediment, debris, and vegetation removal and repair of eroded surfaces associated with drainage inlet and outlet structures.
DM	Between Poinsettia Lane and Alga Road, on the west side of Almaden Lane	The project would involve stabilization and/or continuous maintenance of an existing natural enhanced channel to minimize erosion and sediment transport and deposition downstream.
<i>CIP Projects³</i>		
D-CIP-1 through D-CIP-6	Miscellaneous Road Subdrains (Project Number 3681)	Facilities are located at Carlina Street and Hataca Road; Alicants Road and Corte De La Vista; La Costa Avenue and Cadencia Street; Quebrada Circle; Avenida Nieve; and Circulo Adorno. The storm drains at these locations are experiencing surface/subsurface drainage problems. The site would be investigated and solutions recommended. The repairs would reduce hazards from slips and falls, as well as relieve health hazards due to current ponding.

PROJECT DESCRIPTION FOR THE CITY OF CARLSBAD
DRAINAGE MASTER PLAN UPDATE

Table 2: Draft Summary of Potential Non-PLDA/CIP Projects¹ (continued)

Project Component ID ²	Project Location	Project Description
D-CIP-7	La Costa Avenue Storm Drain Replacement Project; La Costa Avenue between El Camino Real and Viejo Castilla Way	Existing storm drains would be replaced in various locations along La Costa Avenue with RCP drainage structures. The existing CMP storm drains are deteriorating and need to be replaced to maintain adequate drainage capacity and conveyance.
D-CIP-8	Gabbiano Lane Storm Drain Modification; south of Gabbiano Lane near Batiquitos Lagoon	An existing storm drain outlet would be reconstructed to enable the adjacent private desiltation basin to adequately drain.
D-CIP-9	Calle Gavanzo Subsurface Drainage Improvements; west side of Calle Gavanzo	An 8-inch PVC slotted pipe would be installed in the west portion of the roadway to alleviate subsurface drainage issues and existing surface flooding.
D-CIP-10	Romeria Drainage Improvements Project; Romeria Street	Approximately 400 LF of a trapezoidal concrete channel would be replaced, as well as approximately 200 LF of tributary ditches. The existing channel is badly damaged and contains various sink holes. A hydrology and hydraulics study would be conducted to verify the channel size and adequacy of the culvert under La Costa Avenue. The project would increase safety in the area and improve drainage capacity and conveyance.
PROJECT LEVEL		
Basin B		
<i>Non-PLDA Projects</i>		
B	Agua Hedionda Creek as it traverses the Rancho Carlsbad residential area to the Cannon Road Bridge	Dredging of Agua Hedionda Creek would be addressed in the PLDA fee program. Upon completion of channel dredging improvements, long-term maintenance of Agua Hedionda Creek will be required to meet flood control needs (i.e., contain 100-year flood events). Long-term channel maintenance would include periodic inspections; sediment, debris, and vegetation removal; and repair of eroded surfaces associated with drainage and bridge appurtenances.
BN	Calavera Creek as it traverses the Rancho Carlsbad residential area to the convergence with Agua Hedionda Creek	Upon completion of channel dredging improvements, long-term maintenance of Calavera Creek will be required to meet flood control needs (i.e., contain 100-year flood events). Long-term channel maintenance would include periodic inspections; sediment, debris, and vegetation removal; and repair of eroded surfaces associated with drainage and bridge appurtenances.

¹ As the DMP Update design progresses, additional non-PLDA/CIP projects could be identified.

² Component IDs use the first letter to indicate the drainage basin in which the project would be located.

³ CIP projects are not mapped on NOP figures but will be addressed in the PEIR.

PROJECT DESCRIPTION FOR THE CITY OF CARLSBAD
DRAINAGE MASTER PLAN UPDATE

References

- Carlsbad Watershed Network (CWN)
2006 Watershed Descriptions, Cities, and Conservancies
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- City of Carlsbad, Engineering Department
2006 City of Carlsbad Drainage Master Plan Update, prepared by Brown and Caldwell.

NOP COMMENT LETTERS



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
Carlsbad Fish and Wildlife Office
6010 Hidden Valley Road
Carlsbad, California 92011



Hasler

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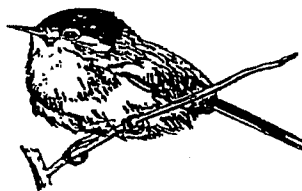
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CARLSBAD DRAINAGE MASTER PLAN PROGRAM
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California Gnatcatcher



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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Carlsbad Fish and Wildlife Office
6010 Hidden Valley Road
Carlsbad, California 92011



In Reply Refer To:
FWS-SDG-4865.1

MAY 11 2006

Ms. Marcela Escobar-Eck
City of Carlsbad
1635 Faraday Avenue
Carlsbad, California 92008-7314

Subject: Notice of Preparation of a Draft Program Environmental Impact Report for the City of Carlsbad Drainage Master Plan Update, San Diego County, California (Project No. 04-02)

Dear Ms. Escobar-Eck:

The U.S. Fish and Wildlife Service (Service) has reviewed the Notice of Preparation (NOP) of a Draft Program Environmental Impact Report (PEIR) for the City of Carlsbad Drainage Master Plan Update, dated March 30, 2006 and received April 4, 2006. The comments provided herein are based on the information provided in: the NOP; the Service's knowledge of sensitive and declining vegetation communities in San Diego County (County); and our participation in regional conservation planning efforts, including the North County Multiple Habitat Conservation Plan (MHCP) and the City of Carlsbad's Subarea Habitat Management Plan (HMP).

The primary concern and mandate of the Service is the protection of public fish and wildlife resources and their habitats. The Service has legal responsibility for the welfare of migratory birds, anadromous fish, and endangered animals and plants occurring in the United States. The Service is also responsible for administering the Federal Endangered Species Act of 1973, as amended (Act) (16 U.S.C. 1531 *et seq.*).

This programmatic project is an update of the City's existing Master Drainage and Storm Water Quality Management Plan that serves to identify improvements and additional infrastructure required to accommodate storm flows in existing and future developments within the City of Carlsbad. Additionally, the Drainage Master Plan (DMP) will provide guidance on developing a Planned Local Drainage Area (PLDA) fee program to facilitate construction of specific drainage facilities. There are several components included in the DMP Update which are currently in various stages of planning and design, including two components that are being analyzed at the project level: the Agua Hedionda Creek Dredging and Improvement Project, and the Calavera

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Ms. Marcela Escobar-Eck (FWS-SDG-4865.1)

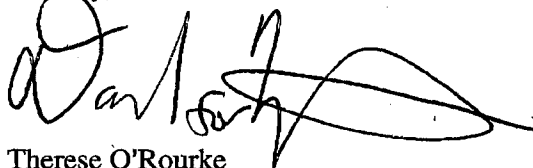
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Creek Flood Control Improvement Project. Both of these projects were authorized and initiated in the spring, 2006, after the U.S. Army Corps of Engineers' (Corps) took emergency measures to prevent flooding in the case of a 25-year storm event. We evaluated potential impacts to federally listed species, including least Bell's vireo (*Vireo bellii pusillus*), southwestern willow flycatcher (*Empidonax traillii extimus*), and clapper rail (*Rallus longirostris levipes*), from these projects under an emergency consultation with the U.S. Army Corps of Engineers.

The PEIR should demonstrate how the proposed projects will be consistent with the MHCP and City's HMP. We offer our recommendations and comments in the enclosure to assist the City in minimizing and mitigating project impacts to biological resources, and to assure that the project is consistent with the MHCP and City's HMP. We request that the PEIR contain the information requested in the enclosure to assist us in our review of the PEIR, assist the City in compliance with pertinent federal and state statutes and laws, and ensure consistency with the HMP.

The Service appreciates the opportunity to comment on the NOP. We are available to work with the City in designing a project alternative that minimizes impacts to biological resources. Please contact Marci Koski at (760) 431-9440 extension 304 if you have any questions or comments concerning this letter.

Sincerely,



Therese O'Rourke
Assistant Field Supervisor
U.S. Fish and Wildlife Service

Enclosure

cc: State Clearinghouse

Ms. Marcela Escobar-Eck (FWS-SDG-4865.1)

Enclosure – Page 1

**U.S. Fish and Wildlife Service
Comments and Recommendations
On the Notice of Preparation (NOP) of a
Draft Program Environmental Impact Report (PEIR)
for the City of Carlsbad Drainage Master Plan Update**

To enable the Service to adequately review and comment on the proposed project from the standpoint of the protection of plants, fish and wildlife, we recommend the following information be included in the Draft PEIR:

1. A complete discussion of the purpose and need for, and description of, the proposed projects, including all staging areas, access routes to the construction and staging areas, fuel modification zones, and all existing or proposed trails.
2. A complete evaluation demonstrating that the proposed projects will be consistent with the MHCP and City of Carlsbad's Subarea HMP.
3. A complete list and assessment of the flora and fauna within and adjacent to the project areas, with particular emphasis upon identifying state or federally listed rare, threatened, endangered, or proposed candidate species, California Species of Special Concern and/or California Protected or Fully Protected species, and any locally unique species and sensitive habitats. Specifically, the Draft PEIR should include:
 - a. A thorough assessment of Rare Natural Communities on site and within the areas of impact, following the California Department of Fish and Game's (Department) Guidelines for Assessing Impacts to Rare Plants and Rare Natural Communities (revised May 8, 2000).
 - b. A current inventory of the biological resources associated with each habitat type on site and within the areas of impact. The Department's California Natural Diversity Data Base in Sacramento should be contacted at (916) 327-5960 to obtain current information on any previously reported sensitive species and habitat, including Significant Natural Areas identified under Chapter 12 of the Fish and Game Code.
 - c. An inventory of rare, threatened, and endangered species on site and within the areas of impact. Species to be addressed should include all those which meet the CEQA definition (see CEQA Guidelines, § 15380).
 - d. Discussions regarding seasonal variations in use by sensitive species of the project sites as well as the area of impact on those species, using acceptable species-specific survey procedures as determined through consultation with Service. Focused species-specific

Ms. Marcela Escobar-Eck (FWS-SDG-4865.1)

Enclosure – Page 2

surveys, conducted in conformance with established protocols at the appropriate time of year and time of day when the sensitive species are active or otherwise identifiable, are required.

4. A thorough discussion of direct, indirect, and cumulative impacts expected to adversely affect all biological resources. All facets of the project should be included in this assessment. Specifically, the Draft PEIR should provide:
 - a. Specific acreage and descriptions of the types of wetlands, coastal sage scrub, annual grassland, and other sensitive habitats that will or may be affected by the proposed projects or project alternatives. Maps and tables should be used to summarize such information.
 - b. Discussions regarding the regional setting, pursuant to the CEQA Guidelines, Section 15125(a), with special emphasis on resources that are rare or unique to the region that would be affected by the projects. This discussion is critical to an assessment of environmental impacts.
 - c. Detailed discussions, including both qualitative and quantitative analyses, of the potentially affected listed and sensitive species (fish, wildlife, plants), and their habitats on the proposed project sites, areas of impact, and alternative sites, including information pertaining to their local status and distribution. The anticipated or real impacts of the project on these species and habitats should be fully addressed.
 - d. Discussions regarding indirect project impacts on biological resources, including resources in nearby public lands, open space, adjacent natural habitats, riparian ecosystems, and any designated and/or proposed NCCP reserve lands. Impacts on, and maintenance of, wildlife corridor/movement areas, including access to undisturbed habitats in adjacent areas, should be fully evaluated and provided. A discussion of potential adverse impacts from lighting, noise, human activity, exotic species, and drainage. The latter subject should address: project-related changes on drainage patterns on and downstream of the project sites; the volume, velocity, and frequency of existing and post-project surface flows; polluted runoff; soil erosion and/or sedimentation in streams and water bodies; and post-project fate of runoff from the project sites.
 - e. Discussions regarding possible conflicts resulting from wildlife-human interactions at the interface between project sites and natural habitats. The zoning of areas for development projects or other uses that are nearby or adjacent to natural areas may inadvertently contribute to wildlife-human interactions.
 - f. An analysis of cumulative effects, as described under CEQA Guidelines, Section 15130.

Ms. Marcela Escobar-Eck (FWS-SDG-4865.1)

Enclosure – Page 3

General and specific plans, and past, present, and anticipated future projects, should be analyzed concerning their impacts on similar plant communities and wildlife habitats.

- g. If applicable, an analysis of the effect that the project may have on completion and implementation of regional and/or subregional conservation programs. Under Section 2800 through Section 2840 of the Fish and Game Code, the Department, through the NCCP program, is coordinating with local jurisdictions, landowners, and the Federal Government to preserve local and regional biological diversity. Coastal sage scrub is the first natural community to be planned for under the NCCP program. The Service recommends that the Lead Agency ensure that the development of this and other proposed projects do not preclude long-term preserve planning options and that projects conform to other requirements of the NCCP program. Jurisdictions participating in the NCCP program should assess specific projects for consistency with the NCCP Conservation Guidelines. Additionally, the jurisdictions should quantify and qualify:
1) the amount of coastal sage scrub within their boundaries; 2) the acreage of coastal sage scrub habitat removed by individual projects; and 3) any acreage set aside for mitigation. This information should be kept in an updated ledger system.
5. The Draft PEIR should include mitigation measures for adverse project-related impacts on sensitive plants, animals, and habitats, as well as measures to fully avoid and otherwise protect Rare Natural Communities from project-related impacts. The Service considers these communities as threatened habitats having both regional and local significance.

Mitigation measures should emphasize avoidance, and where avoidance is infeasible, a reduction of project impacts. For unavoidable impacts, off-site mitigation through acquisition and preservation in perpetuity of the affected habitats should be addressed. We generally do not support the use of relocation, salvage, and/or transplantation as mitigation for impacts on rare, threatened, or endangered species. Studies have shown that these efforts are experimental in nature and largely unsuccessful.

This discussion should include measures to perpetually protect the targeted habitat values where preservation and/or restoration are proposed. The objective should be to offset the project-induced qualitative and quantitative losses of wildlife habitat values. Issues that should be addressed include restrictions on access, proposed land dedications, monitoring and management programs, control of illegal dumping, water pollution, increased human intrusion, etc. Plans for restoration and revegetation should be prepared by persons with expertise in southern California ecosystems and native plant revegetation techniques. Each plan should include, at a minimum: 1) the location of the mitigation site; 2) the plant species to be used; 3) a schematic depicting the mitigation area; 4) time of year that planting will occur; 5) a description of the irrigation methodology; 6) measures to control exotic vegetation on site; 7) success criteria; 8) a detailed monitoring program; 9) contingency measures should

Ms. Marcela Escobar-Eck (FWS-SDG-4865.1)

Enclosure – Page 4

the success criteria not be met; and 10) identification of the entity(ies) that will guarantee achieving the success criteria and provide for conservation of the mitigation site in perpetuity.

Mitigation measures to alleviate indirect project impacts on biological resources must be included, including measures to minimize changes in the hydrologic regimes on site, and means to convey runoff without damaging biological resources, including the morphology of on-site and downstream habitats.

6. As discussed previously, descriptions and analyses of a range of alternatives to ensure that alternatives to the proposed project are fully considered and evaluated. The analyses must include alternatives that avoid or otherwise reduce impacts to sensitive biological resources. Specific alternative locations should be evaluated in areas of lower resource sensitivity where appropriate.
7. If appropriate, a jurisdictional delineation of lakes, streams, and associated riparian habitats should be included in the Draft PEIR, including a wetland delineation pursuant to the U.S. Fish and Wildlife Service definition (Cowardin 1979). Please note that wetland and riparian habitats subject to the Department's authority may extend beyond the jurisdictional limits of the U.S. Army Corps of Engineers.

The proposed project may require a Lake or Streambed Alteration Agreement (SAA). The Department has direct authority under Fish and Game Code Section 1600 *et seq.* regarding any proposed activity that would divert, obstruct, or affect the natural flow or change the bed, channel, or bank of any river, stream, or lake. The Department's issuance of a SAA for a project that is subject to CEQA requires CEQA compliance actions by the Department as a Responsible Agency. As a Responsible Agency under CEQA, the Department may consider the Lead Agency's CEQA documentation. To minimize additional requirements by the Department pursuant to Section 1600 *et seq.* and/or under CEQA, the documentation should fully identify the potential impacts to the lake, stream or riparian resources and provide adequate avoidance, mitigation, monitoring and reporting commitments for issuance of the agreement. A SAA notification form may be obtained by writing to the Department of Fish and Game, 4949 Viewridge Avenue, San Diego, California 92123-1662, or by calling (858) 636-3160, or by accessing the Department's web site at www.dfg.ca.gov/1600. The Department's SAA Program holds regularly scheduled pre-project planning/early consultation meetings. To make an appointment, please call (858) 636-3160.

DEPARTMENT OF TRANSPORTATION

District 11 • 2829 Juan Street
P. O. BOX 85406, M.S. 50
San Diego, CA 92110-2799
PHONE (619) 688-6954
FAX (619) 688-4299



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Be energy efficient!*

May 3, 2006



**11-SD-005
PM 45.57**

Ms. Elaine Blackburn
City of Carlsbad Planning Dept.
1635 Faraday Avenue
Carlsbad, CA 92024-3633

RE: **Carlsbad Drainage Master Plan (DMP) update – NOP (EIR 04-02)**

Dear Ms. Blackburn:

The California Department of Transportation (Caltrans) appreciates the opportunity to review the Notice of Preparation (NOP) for the Carlsbad Drainage Master Plan (DMP) update project. We have the following comments.

The project should differentiate between the City limits (Plan limits) and the actual "Basin Limit" as shown on Figures 2, 3, 4, and 6. The actual drainage "basin limit" extends easterly beyond the Master Plan limits (i.e.: the City limits). Also, the City of Carlsbad should coordinate drainage improvement projects adjacent to Interstate 5 (I-5) described in the Master Plan with the Caltrans I-5 North Coast Widening Project in case there are conflicts or beneficial opportunities. Caltrans is currently developing the I-5 North Coast project in order to increase capacity on the I-5 corridor in the vicinity of this proposed project.

Caltrans appreciates the opportunity to review this project proposal. For questions regarding the Department's comments, please contact Brent McDonald at (619) 688-6819.

Sincerely,

MARIO H. ORSO, Chief
Development Review Branch

cc: BMcDonald	Planning	MS-50
EGojuangco	Frwy. Ops.	MS-55
KJewel	Hydraulics	MS-06



San Diego County Archaeological Society, Inc.
Environmental Review Committee

10 April 2006

APR 2006
PLANNING DEPARTMENT
City Of
Carlsbad

To: Ms. Elaine Blackburn, Senior Planner
Planning Department
City of Carlsbad
1635 Faraday Avenue
Carlsbad, California 92008-7314

Subject: Notice of Preparation of a Draft Program Environmental Impact Report
Drainage Master Plan Update


Dear :

Thank you for the Notice of Preparation for the subject project, which was received by this Society last month.

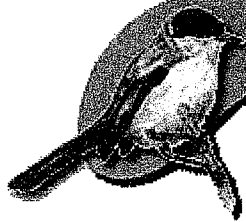
We are pleased that cultural resources have been included in the list of subject areas to be addressed in the DEIR. In order to permit us to review the cultural resources aspects of the project, please include us in the distribution of the DPEIR when it becomes available for public review. Also, in order to facilitate our review, we would appreciate being provided with one copy of the cultural resources technical report(s) along with the DEIR.

SDCAS appreciates being included in the environmental review process for this project.

Sincerely,


James W. Royle, Jr., Chairperson
Environmental Review Committee

cc: SDCAS President
File



Preserve Calavera
Coastal North San Diego County

April 28, 2006

RECEIVED
APR 28 2006
CITY OF CARLSBAD
PLANNING DEPT

Elaine Blackburn
Senior Planner
City of Carlsbad, Planning Department
1635 Faraday Avenue
Carlsbad, CA 92008

**Subject : Scoping Comments Program EIR 04-02
Citywide Master Drainage Plan Update**

Dear Ms. Blackburn :

These comments on the project scope are made on behalf of Preserve Calavera. Preserve Calavera is a grassroots organization of residents of Carlsbad, Oceanside, and Vista and users of the open space around Mount Calavera in northeastern Carlsbad. The area is the largest remaining, contiguous native habitat in coastal North County.

While the city of Carlsbad intends to develop much of this existing open space, our goal is to protect and preserve it. The size of the area, large number of distinct habitats contained within it, and the rich diversity of plants and animals make it worth special consideration for preservation.

The Master Drainage Plan could have significant impacts on this area. Calavera includes portions of the Agua Hedionda and Buena Vista sub-watersheds. Cumulative impacts on these sub-watersheds are dramatic. In the last few years we have observed serious degradation of the creeks and riparian corridors in these sub-watersheds- impacts primarily a result of development and inadequate controls on storm water run-off.

The Master Drainage Plan provides an opportunity to correct these cumulative problems- or to actually make them worse. We hope the final plan will start to reverse years of declining function in our local watershed.

The following are our specific comments on this project:

5020 Nighthawk Way -Oceanside, CA 92056
www.preservecalavera.org

- *The latest comprehensive update in 1994 was prior to new requirements of the Regional Water Quality Control Board. A further round of permit changes is currently being considered. The EIR should clearly indicate how the latest requirements have been addressed- and what provisions are included for responding to anticipated further RWQB action.*
- *The prior plan addressed only pipes of at least 30 inch diameter or larger. Please clarify what elements of the system, if any, are again being excluded and provide some gross analysis that substantiates that excluding such elements will not significantly effect the analysis of impacts.*
- *There are agreements with adjacent cities for use of water and sewer facilities. Clarify if there are any such agreements related to use of storm drain facilities- and how use by other jurisdictions might effect the analysis of impacts.*
- *Please provide maps with overlays that show the boundaries of the actual drainage basins as defined in the Basin Plan of the Regional Water Quality Control Board and an overlay of the city's basin boundaries. The EIR needs to assess the impact of not using the same basin boundaries as in the regional plan- and as the water actually flows.*
- *The actual boundaries of drainage basins do not stop at the city limits of Carlsbad. The EIR should assess the effect of the proposed plan, considering what exists upstream. It should clearly identify what assumptions were included about inflows volume/velocity/duration and how this might change over time considering upstream changes.*
- *Pages 3-10 include statements about the percentage of each sub-watershed that is "allocated" or "dedicated" as open space. The key to an accurate assessment of impacts is not "dedication" of open space- but what actually exists today and what will exist in the future. Because the city currently has large tracts of land that have yet to be developed they now function as open space even though they are not "dedicated" as such. In the future when they are developed the remaining actual open space will be much less than it is today. There are similar changes to impervious cover in the upstream portions of each basin- outside of the city limits. The EIR needs to assess the impacts of the changes to actual open space- and how reducing the open space (ie permeable cover) will effect hydrology of each basin.*
- *The EIR should include a clear explanation about which elements will receive full entitlements and which will require further project level EIR's. Also clarify how this approach is consistent with CEQA requirements to not piecemeal the environmental review.*
- *There are several projects at various stages of design/construction that will change the 100 year flood boundaries. The EIR should show current and proposed FEMA map boundaries and clearly indicate the impact of continued building in the floodplain.*
- *Some proposed flood control methods can have serious adverse impacts on creek hydrology and biological function. Of these, we are particularly concerned about the use of in-creek detention facilities. Wherever any such structures are proposed provide sufficient information to justify adequate alternatives analysis- and that impacts have been minimized.*
- *The MHCP and Carlsbad's HMP require no net loss of wetlands. The EIR needs to specifically identify all direct and indirect wetland impacts, and explain how the proposed*

measures will comply with this requirement.

- *the list of potential drainage infrastructure components does not include what is probably the best and most cost effective in the long term: providing adequate naturally vegetated buffers along riparian corridors. The city currently has a Citizen's Open Space Committee reviewing potential additional acquisition of natural open space. Some assumptions about such natural drainage control measures should be addressed in the plan- and in the required alternatives analysis.*
- *the regional context should include analysis of compliance with the recommendations included in the Watershed Management Plan of the Carlsbad Hydrologic Unit. This plan, like the MHCP and HMP, is the result of years of local effort- and all should be considered in this analysis- for compliance with guidelines, and as part of cumulative impacts assessment. Compliance with the Watershed Management Plan should also be included in the assessment of the project impacts.*
- *the cumulative impacts analysis needs to also consider the prior loss of wetlands and where mitigation has taken place. We sent two emails to Elaine Blackburn on April 27, 2006 detailing this information by sub-watershed within the entire Carlsbad Hydrologic Unit. Please incorporate these two emails describing the results of the student intern project conducted under the direction of Isabelle Kay of the UCSD Natural Reserve System as part of our scoping comments, and include this information in the analysis of cumulative impacts.*
- *The hydrology analysis needs to identify each sub watershed and its condition, current and buildout percentage of impervious cover, efforts that will be taken to minimize the increase in impervious cover, cumulative impacts on the watershed. Studies show that natural biological function can not be maintained where impervious cover is 25% or more, and function is adversely impacted between 15 and 25%.*
- *maintenance of drainage system elements can have a significant impact on both creeks and any surrounding natural lands. The EIR should identify where access will be provided for maintenance, any sensitive habitat impacts and how the maintenance will be done in a way to minimize those impacts.*
- *the description of Type 3 Minor- facility upgrades should be more clear in describing what constitutes "minor." Placing concrete or rock slope protection (bank armoring) is usually not a benign activity. For each such activity there needs to be some quantification in order for the analysis of impacts to have any degree of validity. For example- what is the maximum amount of bank armoring that will be done as part of planned maintenance? What are the restrictions on such activity under routine maintenance vs what would require treating this as a project and providing project level environmental review.*
- *there needs to be sufficient information about the proposed system elements to assess what their actual impacts might be. For example, in the Robertson Ranch Master Plan EIR Parcel 20 is identified as a "Water Quality Basin." Is this a fully vegetated natural area? What is the vegetation? Under what conditions will it function for detention and what is the frequency and duration of use? The design and function of this particular basin needs to be specified. It is shown as extending all of the way to Cannon Road so the interface with roadway drainage in this area also needs to be clarified.*

- *Problems with the adequacy of prior drainage controls plans for Rancho Carlsbad was the primary reason for the last update and was a major factor in this one. The set of elements to address drainage for RCB has gone through a series of serial changes. This has already resulted in two "emergency" modifications after last winter's heavy rains, and what was called "emergency" dredging in March of this year. The updated plan should include some assurances that system elements will prevent continuous emergency conditions- which have resulted in extensive wetlands habitat impacts, water quality impacts, and loss of wetlands function.*
- *In addition to the list/description of projects, please include maps of existing system overlaid on topo map with overlay of sub-watershed boundaries.*
- *Analyses of culverting of creeks have found increased bacteria levels on both the upstream and downstream side of such structures. Because of this, as well as impacts on hydrology and other potential problems, many areas are going the direction of daylighting many creek segments, ie removing culverts and replacing with natural drainage channels. This MDP includes several areas where what was supposed to be an open detention facility will be replaced with a long culvert (for example the proposed BM Cantarini Box Culvert). The EIR should identify the total amount of the system that is culverted/channelized or otherwise precluded from natural function and compare what is proposed with the current MDP update and current conditions. The EIR then needs to evaluate the impact of the full extent of such changes on natural wetlands function.*
- *The MDR Update project goals include a clear focus on the 100- year flood level. But what has been shown to be most damaging is the numerous smaller flows which are continuously scouring beds and undercutting banks, depositing silt and debris and degrading natural creek function. The EIR should identify what impacts the proposed system changes will have on the existing conditions- which is often described as death by a thousand cuts.*
- *A major restoration plan for the Buena Vista Lagoon is currently under consideration. The preferred alternative is expected to be returning the lagoon to a natural salt water flushing condition. This would remove the weir at the lagoon outlet. The EIR should identify the impact of the BV restoration plan on the drainage elements proposed for Basin A.*
- *The proposed Basin B, item B Agua Hedionda Creek dredging and improvement project, would effect 3,500 linear feet of creek. This project alone will have major impacts on this basin. Full project level environmental review for this project , with environmentally preferred alternatives needs to be addressed before the full basin impacts can be determined.*
- *Item BL, a bridge over Agua Hedionda creek at College is listed as a program element, but text description is unclear about what alternative will be used if the bridge is not constructed. Many of the program elements are not yet funded, and the timing of construction is uncertain. The EIR needs to assess the interrelationship between program elements. For example, if x,y, and z, are done- but not A what is the effect? It seems like the plan needs to include some key assumptions about timing of changes, which if any need to be done in concert with each other and how this will effect system function in the interim time period before all of the elements are completed.*

Thank you for the opportunity to comment on this project.

Sincerely,

A handwritten signature in cursive script, appearing to read "Diane Nygaard".

Diane Nygaard
On Behalf of Preserve Calavera

Att : Two Emails on cumulative impacts and mitigation in each sub watershed sent separately on April 27, 2006

IMPACTS (ACRES)	TYPE OF HABITAT IMPACTED												
		TEMPORARY IMPACTS				TOTAL FOR INDIVIDUAL WATERSHED		PERMANENT IMPACTS				TOTAL FOR INDIVIDUAL WATERSHED	OVERALL IMPACTS TO INDIVIDUAL WATERSHED
		WETLANDS	RAPARIAN/ WOODLAND S	STREAMBED	LAKE	OCEAN		WETLANDS	RAPARIAN/ WOODLANDS	STREAMBED	LAKE	OCEAN	
AGUA HEDIONDA HA (904.30)	4.87	0.79	0.11	0	2mil cy	5.77	18	13.22	6.38	4.48	0	42	47.77
BATIQUITOS HA (904.51)	1.133	0	0.17	0	2mil cy	1.303	14.196	5.1302	3.46	44.54	0	67.3262	68.6292
BUENA HSA (904.32)	0.66	0	0.01	0	0	0.67	5.2	0.12	2.12	0	0	7.44	8.01
BUENA VISTA CREEK HA (904.20)	1.653	0	0.178	0	0	1.831	9	0.68	6.672	0.35	40,000 CY	16.702	18.533
COTTONWOOD HA (904.51) (NO INFORMATION)	0	0	0	0	0	0	0	0	0	0	0	0	0
EL SALTO HSA (904.21)	0.06	0	0	0	0	0.06	0	0	0	0	0	0	0.06
ENCINAS HA (904.40) (NO INFORMATION)	0	0	0	0	0	0	0	0	0	0	0	0	0
ESCONDIDO CREEK HA (904.60)	2.227	0.176	2.523	45.1	0	50.026	36.355	4.874	7.953	9.62	1.5	60.302	110.328
ESCONDIDO HSA (904.62)	1.734	0.15	2.426	0	0	4.31	1.017	0.105	0.203	0	0	1.325	5.635
LOMA ALTA HA (904.10)	2.95	4.5	0.021	0	0	7.471	8.957	10.53	3.002	2.27	0	24.759	32.23
LOS MANOS HSA (904.31)	0	0	0.04	0	0	0.04	8.34	0	1.98	0	0	10.32	10.36
RICHLAND HSA (904.52)	0.04	0	0	0	0	0.04	0.28	0	0.199	0	0	0.479	0.519
SAN ELIJO HSA (904.61)	0.14	0	0.9	45.1	2mil cy	46.14	17.5744	0	0.724	0	0	18.2984	64.4384
SAN MARCOS HA (904.50)	3.77	0	350.435	0	1.6	355.805	27.674	8.706	605.809	10.63	1.43	654.249	1010.054
TWIN OAKS HSA (904.53)	0	0	0	0	0	0	0	0	0.2	0	0	0.2	0.2
VISTA HSA (904.22)	0.012	14.46	0	0	0	14.472	0.162	0.222	0.08	0	0	0.464	14.936
TOTALS FOR CARLSBAD HYDROLOGIC UNIT	19.249	20.076	356.813	90.2	1.6	487.938	147	43.5872	638.782	71.89	2.93	904	1391.7026

MITIGATION (ACRES)	TYPE OF HABITAT MITIGATION									TOTAL FOR INDIVIDUAL WATERSHED
	WETLANDS			RAPARIAN/WOODLANDS			WATERS			
	CREATE	PRESERVE	RESTORE	CREATE	PRESERVE	RESTORE	CREATE	PRESERVE	RESTORE	
AGUA HEDIONDA HA (904.30)	25.996	0.53	7.393	7.798	0.42	11.63	2.51	0.02	1.5	57.797
BATIQUITOS HA (904.51)	22.06	8.34	0.404	0.5	0	0.3	2.12	0	0.09	33.814
BUENA HSA (904.32)	6.02	0	5.43	0	0	0	1.38	0	0.01	12.84
BUENA VISTA CREEK HA (904.20)	17.621	0	16.64	5.832	0	0.72	4.45	0	0.138	45.401
COTTONWOOD HA (904.51) (NO INFORMATION)	0	0	0	0	0	0	0	0	0	0
EL SALTO HSA (904.21)	0	0	0.12	0	0	0	0	0	0	0.12
ENCINAS HA (904.40) (NO INFORMATION)	0	0	0	0	0	0	0	0	0	0
ESCONDIDO CREEK HA (904.60)	37.184	1.45	12.575	4.991	0	0.291	3.99	0.67	50.744	111.895
ESCONDIDO HSA (904.62)	1.351	0.56	6.29	0	0.835	0.35	0.709	0	1.71	11.805
LOMA ALTA HA (904.10)	10.89	0.78	5.36	21.88	1.41	0	1.38	0	0.1	41.8
LOS MANOS HSA (904.31)	2.84	0	11.9	0	0	6.1	8.518	0	0.025	29.383
RICHLAND HSA (904.52)	0.524	0	0.14	0	0	0	0	0	0.135	0.799
SAN ELIJO HSA (904.61)	20.544	0	0.32	0.9	0	0.21	0.9	0	48.81	71.684
SAN MARCOS HA (904.50)	16.44	70.88	20.27	10.14	0.16	0	3.6	3.23	2.04	126.76
TWIN OAKS HSA (904.53)	0	0	0	0	0	0	0.26	0	0	0.26
VISTA HSA (904.22)	1.458	0	0.04	0.16	0	14.72	0	0	0	16.378
TOTALS FOR CARLSBAD HYDROLOGIC UNIT	162.928	82.54	86.882	52.201	2.825	34.321	29.817	3.92	105.302	560.736

	HABITAT PARAMETER	CONDITION CATEGORY			
		HEALTHY		UNHEALTHY	
		NEAR PRISTINE/ HEALTHY	SOME DEGRADATION	UNHEALTHY/ OBVIOUS DEGRADATION	EXTREME DEGRADATION
HABITAT DIMENSIONS	QUALITY OF VEGETATIVE COVER*	Diverse and stratified canopy that offers excellent habitat for wildlife.	Inconsistent stratification, but canopy is sufficiently heterogenous to offer wildlife habitat.	One or more levels of trees, woody shrubs, or herbaceous plants is absent. Wildlife cover is limited.	Homogenous habitat which offers no cover for wildlife
	SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
	PLANT AND ANIMAL SPECIES DOMINANCE	100-75% native species present.	75-50% native species present.	50-25% native species present.	<25% native species present.
	SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
	VISIBLE BIODIVERSITY**	High family and/or species diversity. High divergence between families with proportional representation of each.	Moderate family and/or species diversity. Diversity displays sufficient family divergence. Representation may be unbalanced, but no taxa is overly dominant.	Limited family and/or species diversity. Family divergence is reduced and taxonomic dominance is emerging.	Habitat dominated by one or a few species from closely related families.
	SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
	GROUND COVER (Compared to a control)	Ground cover is heterogeneous and protects against erosion (> 90% protective cover).	Ground cover heterogeneity less than pristine but still diverse. Slight erosion evident (70-90% protective cover).	Ground cover is dominated by several species and significant erosion is evident (50-70% protective cover).	Ground cover consists of one or a few species, and extensive erosion has resulted (<50% protective cover).
	SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
	FRAGMENTATION	No significant barriers to wildlife and habitat is continuous.	A few barriers to wildlife movement, but not restrictive. Slight fragmentation of habitat.	Significant restrictions of wildlife movement and habitat fragmentation.	Wildlife movement has been disrupted, and habitat exists in islands.
	SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1

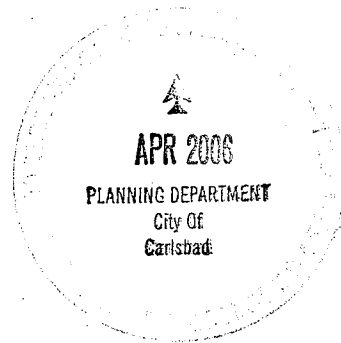
PRODUCTIVITY	COMPATIBILITY#	Site flora and fauna, terrain, and hydrology compatible/ complementary with surrounding habitat.	Site flora and fauna, terrain, and hydrology mostly compatible/ complementary with surrounding habitat.	Site flora and fauna, terrain, and hydrology inconsistent with surrounding habitat.	Site flora and fauna, terrain, and hydrology dramatically inconsistent with surrounding habitat.
	SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
	RIPARIAN FUNCTION	Riparian areas effectively filter run-off, regulate temperature, and provide organic input into the ecosystem.	Riparian areas for the most part filter run-off, regulate temperature, and provide organic input into the ecosystem.	Riparian areas do not filter run-off, regulate temperature, and/or provide organic input into the ecosystem.	Riparian areas absent.
	SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
	ECONOMIC PURPOSE	Human interaction with site is negligible. A symbiosis is achieved.	Human interaction with site is passive, but present.	Human interaction with site is temporarily detrimental.	Human interaction with site is permanently detrimental.
	SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
RESILENCY	CUMULATIVE EFFECTS##	Stress(es) to site have little negative synergy.	Stress(es) to site display some negative synergy.	Stress(es) to site display significant negative synergy.	Stress(es) to site display extensive negative synergy.
	SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
	REVERSEBILITY***	Negative impacts are superficial and can be reversed with little effort.	Negative impacts are significant, but with moderate effort can be reversed.	Negative impacts are extensive and can only be reversed by large-scale efforts.	Negative impacts are irreversible.
	SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
*** Are the mitigation measures helping to reverse the impacts? Examine the habitat's overall degradation.		*Layers of vegetation are considered here. Examine the stratification of trees, woody shrubs, and herbaceous plants. Is there hierarchy or canopy stratification?		#Consider factors such as continuous terrain (topography and composition), compatible hydrology, and consistent flora and fauna. Compare with surrounding habitat.	
		**Pay attention to higher taxa diversity. Count the numbers of families and species present		##Stresses can be independent or connected. If the effect of multiple stresses could not have been achieved without the combination of those stresses, then negative synergy has occurred.	

[illegible]

Rancho Carlsbad Owners' Association, Inc.
5200 El Camino Real, Carlsbad, California 92008
Phone: (760) 438-0333 Fax: (760) 438-1808

April 24, 2006

City of Carlsbad
Ms Elaine Blackburn, Sr. Planner
1635 Faraday Avenue
Carlsbad, CA 92008-7314



RE: Drainage Master Plan Update

Dear Ms Blackburn,

This is in response to your public scoping meeting on April 12th. As you know, Rancho Carlsbad is located in a potential flood plain area in Carlsbad, and any additions or modifications to the Master Drainage Plan is priority number one for this community.

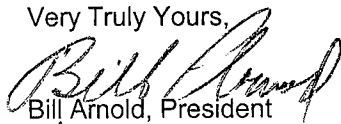
We were pleased to note all of the projects listed that will be of benefit to Rancho Carlsbad, principally Project "B" for the dredging of the Agua Hedionda Creek, that will follow up on the emergency dredging that recently took place.

As far as environmental issues are concerned, we have no objection to the necessary removal of trees or other vegetation within the planned dredging, slope stabilization, and retaining wall work necessary to get Rancho Carlsbad maximum protection.

We are also vitally interested in the work contemplated for the Calavera Creek watershed, and note the the BN Project as well as Basin BJB and BJ are included. We are particularly concerned about the retention of the BJ Basin, as City staff has verbally stated it may not be needed in view of other flood control work contemplated. We take a strong position regarding elimination of that basin. Every Rick Engineering report since 1998, called for it's construction and those reports are the basis for the current flood mitigation plan for Rancho Carlsbad. Lake Calavera outlet repairs and the contemplated construction of an 84" drainage pipe on the north side of Cannon Road augment, but in our view do not eliminate the BJ Basin need.

Finally the inclusion of a long term maintenance program for all these facilities is a critical part of any drainage plan and we have no objection and in fact would welcome periodic dredging when necessary.

Very Truly Yours,


Bill Arnold, President

cc: Carlsbad City Council
RCOA Board Members
Sue Loftin, RCOA Counsel



COMMENTS FORM
EIR SCOPING MEETING FOR
City of Carlsbad Drainage Master Plan Update
EIR 04-02

PLEASE PRINT YOUR:

NAME: JOHN J. MURPHEY

ADDRESS: 5180 DON RODOLFO DRIVE
CARLSBAD, CA 92010

TELEPHONE: 760 438 8039

EMAIL: MURPHEY@ADELPHIA.NET

APR 2008
PLANNING DEPARTMENT
City of
Carlsbad



Please check the box if you would like to be added to the mailing list

Please see attached memo.

See back for mailing address

MEMORANDUM

Following are my comments for inclusion with your COMMENTS FORM, EIR SCOPING MEETING FOR City of Carlsbad Drainage Master Plan Update EIR 04-02.

My name is John J. Murphey and I live at 5180 Don Rodolfo Drive, (Rancho Carlsbad) Carlsbad, California 92010. My house backs onto Calavera Creek. My home telephone number is 760-438-8039; my cell phone number is 760-994-5575; and my e-mail address is Murphey@adelphia.net. I have lived in Rancho Carlsbad since 1985 and am in my second year as a director and member of the Rancho Carlsbad Board of Directors. **My comments are personal only and do not reflect the opinion of the Rancho Carlsbad Board of Directors.**

I have included a check in the box that indicates that I would like to be added to the mailing list.

My comments are directed to the section on page 6 of the 8-page printout of gray boxes (two to a page) that is titled, on page 1, "Carlsbad Drainage Master Plan Update Program Environmental Impact Report EIR 04-02". Specifically, the subjects I am commenting on are located on page 6 of the document, titled "Program Level Analysis" and subtitled "More detailed analysis for projects further along in the design process (bullet point) Calavera Creek Bank stabilization improvements and (bullet point) Long-term maintenance of Agua Hedionda and Calavera Creeks.

[Bullet Point] Calavera Creek Bank stabilization improvements:

A "weir wall" was constructed to intercept Calavera Creek, at the northeast corner of Rancho Carlsbad, about two years ago. In front of the weir wall passes Little Encino Creek and joins Calavera Creek so that both creeks flow together, as a single stream, along the north side of Rancho Carlsbad, westward, to join with Agua Hedionda Creek at El Camino Real, pass under it, and on to Agua Hedionda Lagoon. At the time of the construction, the Board of Directors was invited to view the work in progress. [I was not a part of the Board at this time nor was I part of this invitation. My comments concerning this particular incident are taken from statements from other Board members and are hearsay at best.]

The "V" in the weir wall and the weir wall itself were viewed and at least one (but probably more than one) person from the Board of Directors asked McMillin's people (McMillin Corporation made the invitation and was responsible for its design and construction) why the wall was located parallel to the centerline of Little Encino Creek, opining that water shooting down Calavera Creek would pass through the "V" in the wall, and across Little Encino Creek to destroy the bank on the opposite side thereof where a very important road passed nearby on which Rancho Carlsbad residents drove their RVs from their homes to the storage lot and vice versa. It was explained that a "professional" engineer had designed the weir wall and designed it to allow Calavera Creek (approaching the weir wall at a 30-degree angle) to pass through the "V" in the weir to intersect Little Encino Creek at this 30-degree angle such that no erosion of the opposite

bank would ever occur. This statement was totally disbelieved by the residents and Board members of Rancho Carlsbad based upon their prior life experiences and common sense.

Surprise, surprise! During the first significant rain (in the very rainy season of the year in which the weir wall was constructed) water roared down Calavera Creek and spurted through the "V" in the weir wall, passed directly across Little Encino Creek (not at the 30-degree predicted angle) and eroded a significant part of the opposite bank and undermined the overpassing roadway as well as several areas in the Creek downstream therefrom.

We now fast forward to a few weeks ago when we (the Rancho Carlsbad Board of Directors) began a series of meetings with Brian Millich, Vice President of McMillin Corporation. I attended those meetings. The thrust of the meetings was Mr. Millich's efforts to have Rancho Carlsbad drop its option for what is known as the "option" parcel lying northeast and contiguous to PA-22, itself a parcel of land lying contiguous and north of Rancho Carlsbad, that is owned by McMillin Corporation. Rancho Carlsbad's option has a few years left to run and, so long as Rancho Carlsbad holds the option open, McMillin cannot proceed to develop the option parcel. The City of Carlsbad is in first place to purchase this parcel and Rancho Carlsbad occupies second place in case the City decides not to purchase it. McMillin has placed an unrealistic price on the option parcel to which the City has refused to purchase and Rancho Carlsbad is reluctant to spent this great amount of money.

During discussions, it was revealed (and it was generally known prior to this time) that McMillin had filed plans, in some format that is necessary for modification of the creek bed in front of the weir wall, with various agencies to amend the surface of the land along the sides of and under Little Encino Creek. While we, the Board, had been previously advised that this amendment included reorientation of the weir wall to a true 30-degree introduction angle, changing the "V" notch in the wall to a "U" notch (to modify the flow therethrough), and carpeting the sides and bottom of Little Encino Creek, in front of the "V" notch, such as with a layer of polypropylene fibers and coconut fibers, with an overlay of large concrete blocks [all designed to reduce further erosion], Mr. Millich advised us that only the change from the "V" to the "U" notch and the carpeting was included in the petition or application filed by McMillin with the appropriate agencies and that reorientation of the wall, itself, was not included.

While I do not speak for others on the Board of Directors (I believe some of them are of the same opinion), I cannot afford to believe Mr. Millich in whatever he says is his company's official position as to the changes desired in the weir wall. Mr. Millich has invoked the wrath of the residents of Rancho Carlsbad, in past occasions, by advising us that McMillin Corporation has no plans to build anything in parcel #22. In addition, he has advised the Board on some things that mysteriously change over time without any explanation whatsoever. Accordingly, his statements as to just what McMillin is willing to do at the weir wall is heavily suspect at this point in time.

At the scoping meeting on April 10, 2006 at the City Offices, it was disclosed that Brown & Caldwell, the attorneys preparing the EIR for the City of Carlsbad, has involved itself with some

aspects, but not all aspects, of changes to be made in and about the weir wall. When I questioned why two organizations, namely the City of Carlsbad and McMillin Corporation, are both spending money and sending plans to the necessary State and Federal agencies for modification of the exact same subject matter, I was given the answer that neither organization wanted to "step on the toes" of the other organization in this project.

I find that answer to be insincere and not well thought out. In my mind the dual effort will produce confusion at the agency level and cause both projects to undergo delay while the true scope of the overall project is determined. I have no feeling on the need to change the "V" notch to a "U" notch primarily because I have not been shown any evidence that (1) such a change is needed, (2) what benefit will come from such a modification, and (3) any clear calling for such a change by anyone who is experienced in these matters. While I have heard from City engineers that weir walls "are more of an art than a science", I do not believe it. In addition, on that basis, how does anyone know if such a change will bring about any benefit? It is clear that changing the angle of the wall is needed to avoid further damage to the opposite creek bank and to the overlying roadway. It is also clear that some sort of non-erodable mat, covered by large stones may indeed preserve the banks and creek bed on the downstream side of the weir wall. But the City's project calls for re-orientation of the wall while McMillin's project does not. How can these be balanced? I suggest further efforts be made to condense these two projects into a single project with all three aspects included but, before hand, be supported by clear engineering analysis.

It should be realized that while the residents of Rancho Carlsbad are mostly retired persons, they are not dummies. They represent a wide variety of experiences in a host of endeavors. There are engineers, scientists, lawyers, insurance executives, planners, administrators, policemen, secretaries, etc. and many have been through floods, washouts of rivers and streams, and other such catastrophes. Most, if not all, have attended numerous meetings and are involved with numerous problems such as those faced by business people and family members alike. The bottom line is that many of us know when we are being "handled". I believe this is such a situation and I request the City to give further efforts to think this matter through to its logical end. Either the weir wall should be repaired properly, in all of its facets, or it should not be. Half-way solution and other politically-motivated approaches should be avoided as they waste money and do not achieve the desired results needed to satisfy the situation.

In addition, while some abbreviated discussions were held at the April 10 meeting concerning stabilization improvements, I wish to bring to the City's attention the suggested approach of lining Calavera Creek with concrete plates in lieu of stabilizing the banks with plants and such. As matters stand, the banks of Calavera Creek, as well as the banks of Agua Hedionda, have been eroding during each storm and/or instance of high water. Plants, vines, bushes and other flora have not been effective in preventing this erosion as can be witnessed by the loss (collapse) of several trees that have lined the banks and the recent changes in the meandering of the Creek itself following the rains of 2005.

Without getting into a discussion of what will happen to the land upstream in Calavera Creek, i.e., whether it will be developed into more housing or into school buildings and attendant structures, it is clear that bushes, flowers, grasses, trees and the like, which currently dominate the landscape to the northeast of Rancho Carlsbad, will soon be removed and the underlying land exposed or covered with asphalt and concrete. These coverings do two things: they restrict the underlying earth from absorbing rainwater (thus increasing water runoff) and they reduce resistance (increase the velocity) of water runoff. Both of these factors work to build more severe water runoff loads to Calavera Creek, Little Encino Creek and Agua Hedionda as the rain water works its way down through the drainage basins and creeks to Agua Hedionda Lagoon and into the Pacific Ocean.

Banks of Calavera Creek and Agua Hedionda are continually subject to severe wear and erosion. In addition, the resistance generated by water passing along dirt or earthen banks slows the water and allows it to release its accumulation of entrained dirt from upstream thus depositing large amounts of sediment in the streams and decreasing the stream's ability to effectively carry off the dirt-laden water.

It has been stated that lining the banks of both streams is "frightfully" expensive. However, in terms of the savings given by this construction over the constant cleaning, dredging, repairing and replanting of the walls and floor of these streams, over the years, it appears that maybe concrete is not so expensive after all.

I suggest that concrete lining of both Calavera Creek and Agua Hedionda, as they pass through Rancho Carlsbad, be restudied with an eye toward determining the relative cost benefits achieved in stream maintenance as opposed to the current situation. If the aesthetic nature of Agua Hedionda is determined to be more important than reducing stream maintenance costs, maybe the two creeks should be separately studied. While Agua Hedionda is the most prominent creek in the park and visible to just about everyone traveling through Rancho Carlsbad, Calavera Creek passes along the rear of all properties that border the creek and such a modification of the creek bank would not (and could not) be visible to anyone passing by the front of the homes therealong.

(bullet point) Long-term maintenance of Agua Hedionda and Calavera Creeks.

Recently, the combined efforts of Rancho Carlsbad and the City of Carlsbad resulted in a one-time emergency dredging of Agua Hedionda, as it passed through Rancho Carlsbad, that resulted in the removal of vast amounts of sand and sediment which lowered the bottom of the stream and significantly reduced the possibility of flooding.

The initial dredging was performed in steps that created a series of "pot-holes" in the stream that, theoretically, allowed stirred-up sediment to settle out, thereby allowing clean water to advance downstream toward the ocean. However, a rain storm that followed the bulk of the dredging passed so much water through the stream that the "pot-holes" were obliterated and the stream

took on a clean, smooth and very efficient topography.

At the same time, others are in the midst of developing the land upstream of Agua Hedionda. While there are planned, and partly finished, rain-detaining basins, the basins are not complete and their efficiency in holding back rain water is questionable. What is very apparent, however, is that much of the developed land is still barren of any biological growth, despite the fact that much of this land has been cleared for more than one year. This raw land has caused substantial amounts of sediment to be washed down Agua Hedionda during heavy rains. It has become apparent that, after the dredging operation in Rancho Carlsbad, the muddy waters entering Rancho Carlsbad in Agua Hedionda are once again filling the portion of the stream, that passes through Rancho Carlsbad, with sediment. This is especially true in the area slightly to the east of El Camino Real and under the bridges at El Camino Real and Cannon Road. This slow-flow area is already showing signs of accumulating substantial amounts of sediment from upstream resulting in slower flows and even more dropout of sediment.

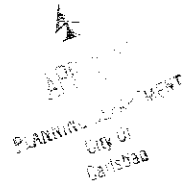
Rancho Carlsbad was advised by the City that sediment depth posts were to be erected in Agua Hedionda, at the time of the dredging, so that levels of sediment can be monitored. To date, no such depth posts have been provided or erected. The level of sediment is rising and, without depth posts installed now, there will be no record of increased sediment depth. This does not bode well for good water course management.

It is respectfully requested that sediment depth posts be immediately provided in Agua Hedionda so that the condition of the creek can be monitored. In addition, a protocol should be established for determining when Agua Hedionda is to be redredged. It has not been dredged for many years if ever, prior to this recent dredging and setting up the protocol now will guarantee that such a long delay will not be repeated.

SUMMARY

- 1) I request the City review its efforts, to prepare and file a request for rectification of the weir wall and surrounding area in Calavera Creek that is independent from the request for the same area filed by McMillin Corporation, with an eye toward forming a single, all-inclusive, and engineering-supported plan to once-an-for-all rectify the problems in that area of Basin B.
- 2) I request the City to study placing a concrete lining on both banks of Calavera Creek and Agua Hedionda, as they pass through Rancho Carlsbad, with an eye toward determining the relative cost benefits achieved in stream maintenance as opposed to the current situation of maintaining the earthen banks that experience collapse during times of high water.
- 3) I request sediment depth posts be immediately provided along the center line in Agua Hedionda Creek, throughout its passage through Rancho Carlsbad so that the condition of the creek can be continuously monitored and, in addition, a protocol be established for determining when Agua Hedionda is to be redredged.

Ladwig Design Group, Inc.



April 14, 2006

Elaine Blackburn
City of Carlsbad
1635 Faraday
Carlsbad, CA 92008

RE: CARLSBAD DRAINAGE MASTER PLAN UPDATE/EIR04/02
(LADWIG DESIGN GROUP JOB NO. L-1048)

Dear Elaine:

Thank you for leading the open discussion at your Faraday office on the scoping meeting for the Carlsbad Drainage Master Plan Update. I have reviewed the document circulated and have several following comments that affect Basin B – Agua Hedionda Creek Watershed.

My particular concern is how the bridge on College Boulevard over Agua Hedionda Creek has been identified. This is known as Facility BL. The 1994 Drainage Master Plan clearly says the cost estimate for this facility [BL] includes provisions for a potential bridge structure on College Boulevard across Agua Hedionda Creek. "The need for a bridge structure versus a box culvert would be determined at the time of development approval."

Elaine Blackburn
April 14, 2006
Page 2

The issue of the box culvert versus a bridge already has been determined through the Calavera Hills II EIR that addressed College Boulevard in this particular area. That EIR addressed the impacts associated with the bridge and, in addition, mitigation has already been planned for those impacts along with other wetland impacts to occur in the BJ Basin Parcel up near the intersection of College Boulevard and Cannon Road.

In the Draft Summary of potential Master Plan PLDA Projects, item BL now makes no mention of a bridge structure to be included as a project.

Further on in the scoping material the bridge identified as BL was listed under non-PLDA Projects. I could not find any specific reference to the bridge itself to be included as a project in the non-PLDA Projects list.

One of the slides that was presented at the scoping meeting was headed "Project Components" and listed the non-PLDA Projects. It also mentions that these non-PLDA Projects include Capital Improvements Projects. The current CIP (2005-06) does show the College Bridge at a cost of \$1,783,000 to be funded by PLDA "B".

I understand that the costs associated with the Drainage Master Plan Update will be provided later. There are several concerns that I have that relate to this. They are as follows:

- The College Bridge is a CIP Project and currently funded by PLDA "B" funds. Will the drainage fees that have been collected to date and earmarked for the College Bridge remain in place? I would also be interested in the amount of money that has been collected through drainage fees to date for the College Bridge.

Elaine Blackburn
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Page 3

- In my mind it would be impossible to approve the Drainage Master Plan without a clear definition of what the CIP is going to show for funding for the College Bridge. I am also concerned with the timing for the bridge funding in the current CIP. The \$1,783,000 is shown in year 6-10 which is 2010-2015. Agency permits have already been approved for "Reach A" of College Boulevard including the bridge. A more reasonable time period for funding should be year 3 or 2007-2008. This would be a reasonable schedule and would allow for developer reimbursement after the bridge has been completed.

I look forward to receiving more information as your project progresses. I also asked that I be added to your mailing list to receive information on this project.

Sincerely,

LADWIG DESIGN GROUP, INC.



Robert C. Ladwig, President

RCL:sbr

cc: David Bentley

